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ORIGINAL LECTURES.

OSTEOPLASTIC RESECTION OF FOOT.

Extract from a Clinical Lecture
Delivered at the German Hospital, October 13, 1888.

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BEFORE showing you an operation this morning, I propose to begin the surgical clinics of this hospital for the ensuing season, by making some remarks upon the case which is here brought before us.

The patient, Charles B., is a laborer thirty years of age, upon whom I performed, between three and four months ago, an osteoplastic resection of the foot. It was done for caries of the largest two tarsal bones, namely, the astragalus and os calcis.

In regard to the family history of this man, which is otherwise good, we learn of the unfavorable circumstance that his mother, who is still living, has had some kind of ulcers upon one of her legs for the past ten years; but that, aside from this, she enjoys fair health. Concerning himself the patient states that in his early childhood he had two sores on his right heel, which remained open for two years; but that his foot afterward gave him no trouble until 1885, when half a dozen sinuses formed about the heel bone, and that for these he had been treated for eighteen months in the hospital of a neighboring county. The patient has no recollection that his foot was ever injured by violence. Taking into account the additional fact that when he was admitted into this institution last January with two of the sinuses still existing, he was also suffering with an ulcer of the cornea, we cannot easily dismiss the belief that there is here a dyscrasia, some defect in the nutritive system, although his appearance now is excellent, and his general health quite good. The eye ulcer was quickly cured, when my colleague, Dr. Deaver, who was on duty at the time, operated upon the foot for necrosis and removed some dead bone. This was followed by marked improvement, but not by radical relief. At the time of my own operation on the 18th of June, a carious condition of the calcaneo-astragaloid joint was readily made out by the probe coming in contact with the rough dead surfaces of the two bones.

The operation to which recourse was had is one of modern device, and but few surgeons have as yet put it into practice. It has been performed but twice in this city, once by my friend, Dr. William B. Hopkins, of the Episcopal Hospital, and once when it was done upon the patient here presented.

This ingenious surgical procedure was originally planned and successfully carried out in 1871 by Wladimiroff, of Russia. Strange to say, it seems to have remained unknown to surgeons of other countries until nine years later, when Mikulicz, of Vienna, performed the same operation; without, however, being aware that it had been previously done by his Russian *confrère*. The operation now bears the names of both of these distinguished men, and is known as the "Wladimiroff-Mikulicz's osteoplastic resection of the foot."

The indications for the operation are, caries of the tarsal bone I have mentioned, and extensive and irreparable loss of tissues of the heel, whether such loss be the result of disease or traumatism. It has been resorted to most frequently for the former cause, but in a small proportion of those cases the disease subsequently extended to other bones, and in one gangrene occurred, making amputation necessary. Nevertheless, the result upon the whole has been very satisfactory.

You will notice from what remains of the foot, and more especially from its unusual position, that it bears some resemblance to talipes equinus, and Wladimiroff originally described his operation as an artificial production of that deformity. In the variety of club-foot to which reference is made, the heel is drawn up by the shortened muscles of the calf, and in extreme cases the weight of the body is carried upon the anterior termini of the metatarsal bones and plantar surface of the toes.

In carrying out the procedure under consideration, which consists of several separate and distinct steps, the aim is to bring the metatarsus into a continuous straight line with the leg by planting the anterior half of the foot in a vertical position upon the ends of the tibia and fibula. To do this in a satisfactory manner, it is necessary, on the one hand, to remove a thin section of the articular surfaces of those bones, as is done in Syme's amputation at the ankle-joint, and, on the other, to remove the posterior surfaces of the scaphoid and cuboid.

Having given you in a general way a conception of the operation and its purpose, it remains to explain the successive steps as they were carried out in this case.

After thorough etherization of the patient, the first step consisted of a posterior tibial neurectomy. For this purpose an incision was made over the course of the nerve behind and below the malleolus, extending forward as far as the tuberosity of the scaphoid. The nerve having been raised from the wound, a piece of it two inches in length was excised. Later on you will understand why this was done. The patient was then placed upon his abdomen with the foot projecting over a firm cushion on which his leg rested, and the sound limb held out of the way.

In the second step, an incision was made across the sole of the foot boldly dividing all the tissues down to the bones, beginning at the tubercle of the scaphoid and ending at a point about three-fourths of an inch behind the tubercular eminence of the base of the fifth metatarsal bone. To understand clearly the relative position of the operator to the patient, you must bear in mind that we are dealing with the right foot. The next incision was started from the upper end of the one made for

the excision of the posterior tibial nerve, the knife being guided through the tendo-Achillis a half inch above the os calcis and thence along the outer side of the foot until it entered the cut made through the sole, when all became continuous in one incision; thus mapping out the part to be removed.

In the third step were included disarticulation of the two diseased tarsal bones, ablation of the ends of the tibia and fibula and posterior surfaces of the scaphoid and cuboid. Disarticulation of the astragalus at the ankle-joint was accomplished from behind forward, whilst in front this bone and the os calcis were detached from below upward, the one from the scaphoid and the other from the cuboid. Here I show you the specimens, which have been preserved; this large mass contains the astragalus and os calcis, here you have the posterior surfaces of the scaphoid and cuboid, and here the section from the tibia and fibula. The two first-named have become united on one side by bony ankylosis. By removing a section from the specimen with the saw, the diseased condition of these bones is made apparent. To continue the description of the operation, the next thing to be done was to remove the remaining band of the Esmarch apparatus which had been applied early, and secure all bleeding points by catgut ligatures. One of the terminal branches of the posterior tibial artery was severed near its origin while some abnormally hardened tissues were being dissected from the bone. The two plantars must be divided a little further down, but the blood-supply to the foot depends mainly on the integrity of the dorsalis pedis.

The large gap was next closed by bringing the foot into its new position; and in order to procure the best possible fixation between the tarsal bones and those of the leg, two sterilized bone pegs, three inches in length and three-sixteenths of an inch in diameter (which were kindly supplied by Dr. Hopkins), were sunk into holes drilled two inches deep into the tibia. Corresponding holes having been drilled, one into the scaphoid and another into the cuboid, each an inch deep, the foot was impaled upon the end of the tibia by means of the projecting pegs. During this stage of the procedure the ends of the retrenched posterior tibial nerve were brought together by two fine nerve-sutures, the tendon of the peroneus longus, which had been shortened by the excision of a considerable piece, was reunited by strong catgut, and the tendo-Achillis was stitched fast to the divided plantar fascia. Several strands of large sized catgut were placed in the wound to facilitate drainage, and, finally, the edges of the skin were approximated by a number of interrupted sutures.

The operation was performed under thorough antiseptic precautions, and during its progress the wounded parts were repeatedly douched by a solution of bichloride of mercury from the irrigator which you see suspended over the operating table.

The limb was secured to an anterior splint of heavy surgical felting, consisting of leg and foot pieces riveted to a long iron bar curved over the ankle region in such a manner as to leave an interval between the pieces of felting at that place. The wound was well covered by antiseptic materials, and the limb suspended at a comfortable height above the bedding by means of rings on the anterior splint. In this position it was an easy matter to apply the subsequent dressings.

The greatest elevation of temperature was reached on the third day after the operation, when the thermometer indicated 101.2° F., but on the following morning it had fallen to 99° F., and thereafter remained within favorable range. The dressings were, as a rule, renewed every three days, the wound always having a favorable appearance, and during the entire healing process there were no deep suppurating tracts communicating with bone. As you see the patient to-day everything looks well.

At the end of ten weeks union was sufficiently firm to justify, under the influence of ether, the forcible turning up of the toes, which for a long time had been held rather immovable from false ankylosis.

With a supporting bandage at the seat of union and by the aid of crutches, with which he expects soon to dispense, he is now practising locomotion about the wards of the hospital.

ORIGINAL ARTICLES.

TRAUMATIC ANEURISM OF THE LEFT BRACHIAL ARTERY.

Failure of direct and indirect pressure; ligation of the artery immediately above tumor; return of pulsation on the tenth day; ligation immediately below tumor; failure to arrest pulsation; incision and partial excision of sac; recovery.

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NOTWITHSTANDING the fact that in these latter days the integrity of the brachial artery has ceased to be endangered by the practice of venesection, still, traumatic aneurisms of this vessel are sufficiently common and amenable to ordinary treatment to merit for the records of such cases no other than a commonplace interest. The exceptional features presented by this case, as indicated by the heading, are sufficiently instructive and interesting, it is hoped, to commend this report to the attention of the reader.

The patient, Manuel H., colored, laborer, native of Louisiana, æt. twenty-six, was admitted into Ward 2, Charity Hospital, April 30, 1888. The

history given by patient was, to the effect, that two months before admission he was accidentally shot with a rifle, the whole load, consisting of fine bird shot, being distributed in the scapular, posterior acromial, and humeral regions of the left side, the gun having been fired at a distance of about fifteen feet from the patient. Two weeks after the shooting and when he believed himself completely recovered from the effects of the injury, he noticed a swelling on the inner and posterior aspect of the arm, nearly midway between the bend of the elbow and the lower border of the armpit. This swelling "throbbed" and rapidly increased till it attained its present dimensions.

Condition on admission.—Patient is a robust, tall, and very muscular negro, to all appearance perfectly healthy, outside of the local trouble for which he seeks relief, and without any history of hereditary or acquired taint. On stripping the patient, the left arm presents a marked contrast to the opposite member; it is decidedly larger as shown by the most superficial inspection, presenting an elongated, fusiform swelling which pulsates. On closer inspection it is also noticed that the skin over the scapular, acromial, and posterior humeral regions is closely sprinkled with small dark cicatricial dots which indicate the points of entrance of the small shot; an opinion which is confirmed by the ready detection, by palpation, of the shot as they lie, for the most part, encysted, subcutaneously, at the very point of entrance. It is found that the prominence of the tumor begins, above, about three inches from the lower border of the pectoralis major and terminates below at a point one and one-half inches from the bend of the elbow. The circumference of the affected arm at the most prominent part of the tumor is fourteen and five-eighths inches that of the healthy arm at the same point being twelve inches.

Inspection reveals pulsation which is confirmed by palpation. A marked thrill is also detected in the most prominent and apparently thinnest part of tumor; a decided purring murmur is heard on auscultation, and it is noticed that the pulsation is diffused, characteristically expansive, and synchronous with the radial beat. Pulsation, thrill, and all the active phenomena manifested by the tumor are immediately arrested by pressure over the axillary lower third, or subclavian, above clavicle. Pressure on axillary, sufficient to arrest radial pulsation, causes marked diminution in size of tumor, but this reduction is best marked after application of the Esmarch bandage, under which the circumference of the arm is quickly reduced to twelve and six-eighths inches.

Diagnosis is, plainly, traumatic aneurism of the brachial artery.

Treatment.—In view of the readiness with which the circulation in the tumor was controlled by pressure, the Esmarch was applied; but this had to be removed ten minutes after application owing to the intolerable pain and almost agony that it produced. The patient protested so emphatically against this method of treatment (Reid's method) that it was not repeated.

The next day, April 1, the patient was put to bed, the diet was reduced, veratrum viride, potass. iod., and ergot were administered, and the Massachusetts General Hospital compressor was carefully adjusted to the brachial, just above the aneurism. At the same time, the forearm was tightly flexed on the arm. The patient bore the compressor, screwed sufficiently tight to arrest the radial pulsation, for forty minutes, when the pain became intolerable and the pressure had to be diminished. The compressor was subsequently applied, only lightly enough, however, to slacken the circulation in the tumor and weaken the radial pulsation.

April 22. The compressor has been alternately compressed and relaxed but kept on the artery all day and all night under the supervision of Mr. Sherck, the *interne* of the service. The patient gives evidence of having passed a wretched and sleepless night owing to pain from the compression. On removing the compressor, the tumor pulsates most vigorously and the arm measures now fifteen inches in circumference, showing an increase of three-eighths inch since the beginning of treatment.

23d. The compressor has been kept moderately adjusted, the forearm flexed on the arm and the arm on shoulder; the arm being kept in this position of forced flexion by a well-adjusted bandage which fixes it to head. The patient, who is anxious to get well and is willing to do all in his power to facilitate a cure, has stood with fortitude the ordeal imposed upon him, though an occasional hypodermatic injection of morphia has been required to help him, especially at night-time. The tumor, in the meantime, has not been in the least affected by the therapeutic measures thus far instituted. It pulsates more vigorously than ever, the arm has gained one-eighth inch more in circumference, and the sac is apparently becoming much thinner on the inner aspect of the arm where it threatens to rupture. In view of the unfavorable outlook, it was decided to ligate the brachial in its upper third, just below the superior profunda and immediately *above* tumor. This was done under careful antiseptic precautions, and without difficulty; the artery being ligated with a Kocher's catgut No. 9 (juniper oil), the ligatures cut short, and the incision closed without drains.

Immediately after ligation the pulsation and all the active phenomena in the aneurism were arrested. The tumor became hard, the radial pulse imperceptible. The arm shrank one and one-half inches at maximum circumference of tumor.

30th. Dressing removed, union by first intention throughout wound. Tumor does not pulsate, but has shrunk very little since day of operation.

May 2. In examining the case, my attention was directed to a slight localized pulsation in the tumor, by one of the students in attendance. This pulsation became more marked the next day and progressively continued until it was almost as pronounced, and the tumor as painful, as when patient was first seen.

6th. I decided to ligate the distal end of artery *immediately below tumor* at bend of elbow, and in case of failure to control the pulsation thereby, to apply the Esmarch and lay open the sac and seek for the intermediary nutrient branches.

Operation.—A catgut ligature (Kocher's, 9) was applied to the brachial at the bend of the elbow without the slightest perceptible effect on the pulsation or size of the aneurism. The Esmarch was then applied and an incision was made along the whole length of the tumor extending from the primitive incision for the ligation of the brachial, close to the lower border of the axilla, to the bend of the elbow, about six and one-half inches. The sac was at once exposed, and, with the hope of extirpating it, a close though rapid dissection was begun which succeeded in isolating both ends of the sac and the major portion of its anterior and internal aspect; it was found impossible, owing to intimate connection of the sac with the important and deeper structures of the arm, especially with the biceps and brachialis anticus, to continue the dissection toward the humerus.

The dissection and isolation of the sac were therefore stopped and a large incision made throughout its whole length; at the same time an elliptical piece of sac, representing its exposed portion, was excised, and the clot which was partially laminated, but mostly passive, in its central parts, was turned out in larger quantities, the whole cavity being constantly and thoroughly irrigated with a 1 : 2000 acid sublimate solution (Laplace's). By this means three orifices were readily detected at the bottom of the sac, two of these being large enough to admit readily a No. 8 gum catheter; the middle orifice only offering some resistance to the catheterization.

The gum catheter was first passed into the orifice nearest the axilla and it readily passed upward inside of the artery until it stopped at the point where the first ligature had been applied sixteen days previously, proving clearly that that was the proximal axillary end of the aneurism. A catgut ligature was once more applied while the catheter was *in situ*, the catheter, which served as a perfect guide, being withdrawn as the ligature was tightened. The introduction of the catheter into the lower orifice led at once to the bend of the elbow, where it was arrested at the point where the ligature had just been applied. It remained now to close the third or middle orifice, which was smaller and apparently had no connection with the two preceding; this orifice I presumed to be the orifice of a much dilated inferior profunda. This orifice was completely sealed by passing four fine interrupted silk sutures (for want of fine catgut) through its lips. The Esmarch constrictor was then relaxed and I was considerably surprised to notice a decided flow of blood from the other two orifices notwithstanding the fact that the vessels with which they communicated had been apparently controlled by previous ligature at the proximal and distal extremities of the sac; this showed plainly that there must be some important collaterals which communicated with the vessels between the points of ligature and the internal or aneurismal orifices. In view of this I immediately stitched the lips of the orifices with *fine* sublimated silk, by which means the openings were sealed completely and not a drop of blood entered the sac henceforth. A strip of acid sublimated gauze (Laplace's) was then left in the sac instead of a drain and deep interrupted sublimated silk and catgut sutures applied.

In addition to the usual antiseptic dressing the whole arm was wrapped up in cotton wadding and hot bottles were kept to the forearm and hand.

7th. Patient has passed a restless night and suffered great pain at site of wound. Temperature 102° F.

In view of this, dressings were removed under antiseptic precautions, and the cause of the trouble discovered to be an intense erythema and *complete* vesication of the edges of the wound, owing to the overzealous application of the too strong and caustic 1 : 500 acid sublimate gauze. The trouble could have been obviated by using a weaker gauze, or previously protecting the skin with a layer of Lister's protective or iodoform gauze.[1] A milder gauze (1 : 1000) was substituted and the wound dressed otherwise as usual. From that date onward the wound gave no further trouble; it granulated without further suppuration and the patient was discharged completely cured and with only a linear cicatrix to indicate the site of the aneurism, May 21, 1888.

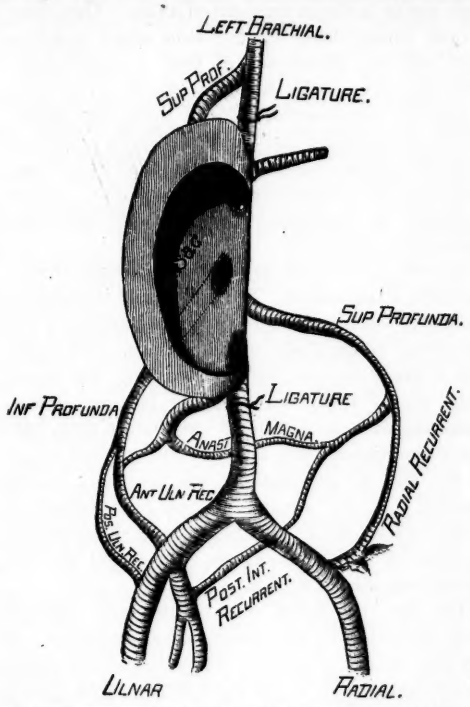
Remarks.—An eminent authority[2] has written: "Deligation of the brachial, or of the lower part of the axillary artery for aneurism is so very generally successful and is so slight an operation that but a small number of cases are published." It is to the fact that the case under consideration proved so marked an exception to the general rule thus stated that it owes its main interest. It will be noticed that (1) after the failure of the various measures that had been instituted to diminish the circulation in the sac, (2) the brachial was ligated at what might be called the point of election in the upper third of the arm, just below the origin of the superior profunda and immediately above the sac; that (3) apparent cure followed the deligation of the artery at this point, (Anel's operation); that (4) pulsation returned on the tenth day, and with it all the other aneurismal symptoms; (5) that four days after the return of the aneurismal symptoms a ligature was applied to the brachial at the distal end of the sac; (6) that notwithstanding this ligature the tumor still pulsated and its size remained totally unaffected; (7) that after incising at the same sitting and clearing the sac, (old operation) the orifices of three arteries of supply were readily discovered and the inefficiency of the ligatures easily explained, as will be readily understood by referring to the accompanying diagram; (8) the ease and the thoroughness with which the bleeding orifices of the nutrient vessels were sealed by the method employed, viz., *suture;* (9) lastly, the rapid recovery of the patient and the equally prompt healing of the wound in spite of the extensive traumatism inflicted.

Tripier, an excellent authority, states in a valua-

[1] Vide article on "Corrosive Sublimate" by Dr. F. W. Parham, New Orleans Medical and Surgical Journal, June, 1888.

[2] Barwell, Ashhurst's Encyclopædia of Surgery, 1883.

ble contribution on the pathology of the brachial artery[1] that "in all cases of circumscribed traumatic



Schematic representation of the collateral circulation in the case of M. H.

aneurism we should always try indirect digital compression if it is possible to apply it. If it does not succeed, then we must chose between the ancient method and that of Anel. The ancient method is of more *difficult execution*, but it is incomparably more certain in its results, as it more positively guards against relapses and hemorrhages. It is certain, however, that by Anel's method some very good results have been obtained; but in a certain number of cases it has failed and the surgeon has had to appeal to the ancient method. Several instances of this sort have been recorded. The most complete and instructive [thus far, 1869] having been that of Brodie, who in 1820, in a case of brachial aneurism resulting from an unfortunate venesection, applied a ligature to the brachial about seven centimetres above the tumor. The aneurism returned about five months after; a second ligature about three centimetres above the aneurism was now applied [and the sac opened.—R. M.]; the tourniquet was removed and hemorrhage followed from the sac. A fresh ligature was now placed immediately below the sac; the tourniquet was again removed, and another gush of blood followed from the sac; then a fourth ligature was placed *immediately* above the tumor and this did finally control the hemorrhage."

This was certainly an obstinate case; but energetic as were the procedures adopted by Brodie they would have failed with the aneurism now reported, as, in this instance, the ligature immediately *above* and *below* the sac completely failed to check the circulation in the tumor. It is plain that no other method would have succeeded but that which was adopted, *i. e.*, the free opening of the sac and *the closure of the orifices of supply in the sac itself.* It is in accomplishing this last result that we have an opportunity of observing the advantages gained by the improved technique of the present day.

It is doubtless greatly due to the difficulties formerly experienced in attempting to secure the nutrient orifices in the sac that Tripier and the majority of contemporary writers who appreciate the thoroughness and great merits of the Antyllian operation for aneurisms of the extremities, still regard it as of "more difficult execution." In the light of my recent experience, I feel convinced, however, that this is one of the difficulties of the operation which is most easily surmounted. It will be remembered that Boyer, Günther, and other older surgeons already recommended the introduction of bougies or catheters into the aneurismal openings in order more readily to isolate and secure the proximal and distal ends of the artery. By this means they succeeded readily enough in securing the distal and proximal end of the tumor, but only beyond the limits of the sac, so that the intermediary branches, which, as in the case here recorded, are sometimes so troublesome, were not intercepted by the ligature and continued to bleed in spite of it. In order to secure these collaterals, which communicate with the main vessel between its immediate extra-aneurismal portion and its proper opening, or mouth, in the sac, the method recently suggested and practised by Annandale offers great and positive technical advantage.[1] This method consists "in introducing a bougie of suitable size into the openings from the side of the sac, in making a small incision through the wall of the sac on each side of the bougie, and in passing an aneurism needle through these round the vessel, the ligature being tightened as the bougie is carefully withdrawn."

In the present instance the bougies were only used to apply ligatures outside of the sac; the bleeding orifices within the sac having been thoroughly sealed by a few fine sutures. This procedure served me so satisfactorily, that I cannot but heartily recommend it to those who may be placed in similar circumstances.

[1] Article "Brachiale," Dechambre's Dictionnaire Encyclopedique des Sciences Médicales.

[1] Vide Edinburgh Medical Journal, February, 1886; also, Editorial, in THE MEDICAL NEWS, May 29, 1886.

In addition to this important detail, we might add that the complete ischæmia of the limb which is solely obtainable by the Esmarch bandage, which so readily adapts the parts to the difficult and delicate dissections sometimes required in the practice of this operation; also the introduction of the animal ligature, which has so thoroughly revolutionized the practice or, at least, the principles of arterial deligation to such a degree indeed that, in future, the so-called spontaneous or idiopathic aneurisms will, in many cases, be treated with the ligature in as close a proximity as the purely traumatic. Again, the superiority of the antiseptic practice which totally suppresses or greatly minimizes the risks of suppuration, risks that were so unavoidable and disastrous in the older days; and, finally, that greatest and grandest of the advantages of the modern surgeon —anæsthesia—which allows the operator to cut with a calm and deliberation that were denied his ancestors, are all circumstances which are conspiring to return to the "old" operation the prestige which has been necessarily denied it for so many years.

AN ENVIRONMENT EXPERIMENT REPEATED 1888.[1]

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IN a paper read before this Association at its last session some experimental evidence was adduced which tended to show that, at the first step of artificial tubercular infection, the pathogenic properties of the tubercle bacillus and the natural resistance of the tissues are so closely balanced that infection may often be prevented and always hastened by the nature of the environment in which inoculated animals are placed.

In order to complete this research, a confirmation of the evidence already obtained as to the favorable influence of a good environment over the course of the disease has been sought for, while two points relating to the experiment in which the rabbits were allowed to run wild and failed to become infected, have seemed to merit further study. The first relates to the quantity of virus made use of, and the second to the permanency of the beneficial influence exercised by favorable surroundings. Whether the animals would have escaped equally well had the amount of bacillus-bearing fluid injected been larger, and whether their apparent recovery was permanent or only temporary, are questions to which an answer has been sought by a repetition of the former experiment with such variations only, as would tend to throw light on these points.

On June 10, 1887, six full-grown, healthy rabbits, were inoculated in the right lung with a quantity of a pure culture of the tubercle bacillus, as nearly as could be estimated, at least twice as large as that made use of in the experiment of 1886. They were at once turned loose on the same island and supplied with an abundance of food throughout the entire summer. After being permitted thus to run at large for four months, three of them were killed, while the remaining three were placed in a box and spent the following four months in confinement in a sandy pit, on a moderately restricted diet. At the expiration of four months they too were killed and their organs examined.

LOT NO. 1.—Killed as soon as removed from a favorable environment. In the first rabbit no lesion whatever, was observed; in the second extensive and advancing tuberculosis of both lungs, with caseation at many points in the injected lung, was noted; while in the third, a thoroughly localized lesion, consisting of a small fibrous cyst, containing hard putty-like material and attached to the costal pleura at the site of inoculation, was the only disease present. In the centre of this fibro-calcareous nodule a few bacilli with spores were demonstrated by staining. All the organs were sound and the animal was loaded with fat.

LOT NO. 2.—Killed four months after removal from favorable to less favorable surroundings. In the first animal examined, a small localized cavity in the middle lobe of the right lung marked the site of injection. The connective tissue forming the walls of this little excavation was so thick as to make it resemble a cystic tumor, in the centre of which were a few drops of a turbid fluid. The lung tissue in the immediate vicinity was normal and no enlarged bronchial glands were detected. The other organs were all healthy and the general nutrition excellent. The fluid from the cavity stained and examined under the microscope showed a few bacili, most of them full of spores, and from a portion transferred to blood serum, a pure culture of the tubercle bacillus was readily obtained. In the second rabbit all the organs were perfectly normal, in the third the following lesions were noted. The right pleura, especially on its mediastinal aspect, was studded with small growths, some of them nearly as large as a split pea, of extreme toughness and light yellowish color; on section they were found composed of a fibrous capsule of varying thickness containing material of the consistency and color of dried putty and partly calcareous. Under the microscope a few bacilli were made out in these nodules, and plants from the same source on blood serum resulted in a pure culture of the tubercle bacillus. The lungs were perfectly free from disease, the other organs were sound and the animal was in good condition.

A comparison of the experiments of 1886 and 1887, made under precisely the same conditions,

[1] Read before the American Climatological Association, September 19, 1888.

except that in the latter double the quantity of virus was injected, gives the following results. In 1886, for five rabbits, one death occurred from progressive tuberculosis, and four entirely escaped infection. In 1887, out of six animals, one at the autopsy showed advancing diffuse pulmonary tuberculosis, two failed to become infected, and three (or one-half) presented localized and arrested primary lesions. The beneficial influence produced by a good environment on the course of the tubercular affection, as evinced by the arrested lesions of the last rabbit, seems to have been maintained for four months in spite of their removal to less favorable surroundings.

The dormant virulence of the germs and the dangers which still threatened are shown by the readiness with which these microbes and their spores spang into activity when planted on a suitable culture medium.

From a comparison of the two experiments it would appear that the amount of virus which enters the economy at one time is an important factor in determining infection, and the influence of a favorable environment is emphasized, not only by the entire freedom from disease presented by two of the rabbits, but by a careful study of the arrested lesions of their mates. The lungs of these animals bore testimony to the effectual efforts of nature to localize the mischief and in none of them were secondary lesions present. In two a fibrous sac contained all that remained of the necrotic tissues and the bacilli, and formed an efficient barrier between these still dangerous elements and the healthy parts by which they were surrounded; in the third the injection passing between the upper and middle lobes had evidently entered the pleural cavity alone and acted on a much larger surface; the calcified and fibrous nodules which studded the pleural surfaces marking the numerous foci which had been successfully localized.

The absence of any fresh outbreak of tubercular disease noted at the autopsies of the animals placed for the last four months in less favorable surroundings, is evidence that the conservative reaction of the tissues against the bacilli tended ultimately to bring about complete recovery. The danger of relapse could not, however, be said to have passed, for the encapsulated bacilli grew readily when released and planted on a suitable culture medium.

The autopsy room constantly demonstrates that infection is often arrested when the primary lesions are restricted, while death almost invariably follows when they become more advanced. Vibert recently, while making 131 autopsies at the Paris Morgue on persons who had come to their death by violence while apparently in good health, noted in twenty-five—that is, in more than nineteen per cent., the presence of some slight tubercular lesion. In seventeen of the twenty-five a few calcareous and fibrous nodules remained as the only evidence of an unsuspected and arrested tubercular process, but in none were the pathological changes in the lung extensive. Recovery often follows the operations now undertaken for tubercular peritonitis, though it is evident that all the infectious material cannot be removed. Dogs when injected subcutaneously with a moderate amount of a culture of tubercle bacilli, develop only localized foci, show no deterioration of health, and finally recover completely, but their resistance to the disease can be overcome by the inoculation of larger quantities of the virus. Koch, for a long time, failed to infect rats, but finally succeeded by repeated introduction of more liberal amounts of the culture.

The doctrine of the unity of tubercular virus may be said to derive support from a consideration of the proof offered by both experiments taken collectively, for although the amount of virus injected proved a most important factor in determining infection, whether the animals escaped entirely or died of progressive tuberculosis, whether purely localized disease not incompatible with life or widely differing generalized and progressive pathological processes were induced, seemed to depend not on any variation in the nature of virulence of the virus injected, which was the same in all cases, but in an increased or diminished degree of resistance induced in the tissues through the influence exercised on the vitality of the animal by extremes of environment.

All attempts at the direct destruction of the tubercle bacillus in living beings by germicides have so far proved fruitless, while the records of the autopsies made by Vibert, Councilman, and others, as well as the evidence offered by the present research, furnish proof that the tissues themselves can, under certain conditions, either limit the destructive action of this microbe or even entirely rid themselves of its presence. The best promise of success in the management of tubercular affections for the present, therefore, lies not so much in the search for specific germicidal methods of treatment as in a careful study of all those measures which tend to increase the vital resistance of the infected individual. One of the principal objects of this Association is the study of those conditions of light, air, and habitation best adapted to bring about in the human subject affected with tuberculosis, arrested lesions such as have been described above. That it is possible artificially to produce this result on animals by these simple means alone should be an incentive to a thorough discussion of those climatic and hygienic conditions which go to make up a favorable environment.

THE ABORTIVE TREATMENT OF SYPHILIS.

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THE essential nature of syphilis has not, as yet, been definitely determined. It seems probable, in the light of modern pathology, that it will be found to depend upon a specific microbe, but that microbe has not yet been isolated or cultivated, or distinctly demonstrated in any way, either clinically, experimentally, or microscopically. The treatment of syphilis cannot, therefore, be based scientifically upon anything but clinical experience. Such experience, however, points so unequivocally to the employment of some form of mercury throughout almost the entire course of the disease, that as regards this main point there are practically no differences of opinion among living syphilographers. Whether we assume that syphilis has to be classed with the exanthemata as a specific eruptive fever, in which case the mercurial may be regarded as a specific antidote to the syphilitic virus; or believe that the phenomena of the disease are due to the entrance into the economy and the multiplication therein of a certain protoplasmic mass—the so-called syphilitic cell—in which case the effects of the drug may be attributed to its action in promoting destructive metamorphosis; or whether, confessing ignorance, we simply appeal to the history of the therapeutics of syphilis and select the drug which we know to have been of the greatest value, we are equally led to employ some form of mercury. There is also but little difference of opinion as to the general method of its employment. Whether given as an antidote, an alterative, a "tonic," or empirically, small doses administered over long periods, with the idea of producing in each case the full physiological effects of the remedy while avoiding its toxic action, represent the views of the vast majority of specialists.

When, however, we approach the subject of the proper period at which to begin its administration we meet at once with a wide divergence of opinion. Mr. Jonathan Hutchinson, unquestionably one of the ablest of living syphilographers, has recently reiterated, under the above attractive caption, the views which he long ago expressed regarding the early administration of mercury in syphilis, claiming that by the prompt employment of the drug in cases of chancre, and its subsequent continuous use, the secondary stage of the disease may be suppressed or rendered "abortive."[1] His general propositions will undoubtedly meet with universal acceptance. When he states that in cases in which the induration of the sore is well characterized and considerable, it always yields quickly and definitely to the influence of mercury; that we never see sores remain typically hard while the patient is under that influence; that in cases in which high temperatures have been observed in syphilis, they always promptly subsided under the use of mercury; and that when the patient receives no treatment until his eruption is well out, mercurial medication will usually, in the most definite manner, cause the eruption to disappear, every one having experience in the treatment of this disease must undoubtedly agree with him. The probable truth of the view which he has always so warmly advocated, that syphilis is due to a specific particulate virus, or, in the language of to-day, to a living microbe, and that, therefore, it is quite within reason to speak of the "specific" or "antidotal" action of mercury, will also be generally, though not universally, admitted. But when we come to consider his advocacy of the administration of mercury, immediately upon the appearance of induration in the chancre, we meet with a serious practical difficulty which, it seems to me, Mr. Hutchinson hardly estimates at its full value. There is a widespread belief among syphilographers, that while there is a strong probability that an indurated sore will prove infecting, and that a soft suppurating sore will not, there are exceptions to both these rules, and that "there is really no absolute proof of the infecting nature of any given sore, but the fact of infection itself." Mr. Hutchinson, it is true, says that ever since the recognition of the facts that some chancres are not infecting, and that the phenomenon of induration is the most valuable one by which to diagnosticate the true chancre, we have been in the habit of waiting until the character of the sore declares itself before beginning to use the specific, and adds, that many, and especially those of the French school, have advocated delay until constitutional symptoms in the form of eruption appear, but with this remark apparently dismisses this aspect of the subject.

I have always regarded his work and teachings with such admiration and respect that I have been led once more to consider the matter carefully, having for years taught and practised on the theory above mentioned, namely, that, all things considered, it was wisest to postpone the use of mercury until there was evidence of constitutional infection. Every surgeon whose work has brought him in contact with large numbers of cases of venereal sores, must recognize the fact rather unaccountably ignored by Mr. Hutchinson, but unquestionably familiar to

[1] The Lancet, January 31, p. 174. Mr. Hutchinson, among other conclusions, stated his belief: "That it is impossible to begin the administration of mercury too soon, and that it should be resorted to without loss of time in all cases in which a chancre shows a tendency to indurate; that many cases of indurated chancre, treated early by mercury, never show any of the characteristic symptoms of the secondary stage.

him, that between the typical soft suppurating local sore and the distinctly indurated chancre there are large numbers of doubtful ulcers which partake of the characteristics of both: local sores with deceptive inflammatory hardening and true chancres with equally deceptive inflammatory softening, suppuration, and even loss of substance.

Nearly every specialist who has written upon the subject has recognized and been influenced by this well-known fact. Mauriac, in his excellent paper on the diagnosis of chancre, after describing the cartilaginous, elastic, sharply circumscribed resistance met with at the base of a true chancre, says that when we find it we may "suspect very strongly that we are dealing with a syphilitic growth, although even those symptoms cannot be considered as infallible." Diday prefers to wait until secondary symptoms make their appearance before instituting mercurial medication, believing, with Zeissel and Sigmund, that the subsequent course of the case is either uninfluenced, or is actually rendered milder by this delay. Bumstead and Taylor assert very positively that no course of mercury administered for a chancre, however thorough, or prolonged, is likely to prevent the subsequent evolutions of general manifestations. Some eminent authorities maintain the contrary, but their opinion has not been confirmed by our own experience. In the very many attempts that we have made to subdue the disease during the existence of the initial lesion, and prior to the appearance of general manifestations, we have always failed. Moreover, although the use of mercury retards the appearance, and probably ameliorates the severity of the secondary symptoms, yet it is a fact attested by many observers, ourselves included, that those cases ultimately do best in which the specific treatment is deferred until the secondary stage. Keyes says "general treatment should be commenced as soon as the diagnosis of syphilis is positive. To be positive on such an important point requires more evidence than is furnished by the simple physical characters of the sore, be they ever so positive. Diagnosis sufficiently accurate to commence treatment upon can only be made by confrontation—establishing the syphilitic disease in the person from whom the chancre was derived—or by waiting until some positive corroborative signs of secondary lesions appear. When the diagnosis is sure, there is no need of further delay."

Van Harlingen, in the *International Cyclopædia of Surgery*, says, "as regards the period at which the administration of mercury should begin, it is now agreed by most syphilographers that nothing is gained by its too early administration. Given on or shortly after the appearance of the initial lesion, its effect is to delay and render irregular the definite generalized lesions, without preventing their eventual appearance. An element of confusion is thus introduced into the orderly evolution of the various manifestations, and occasionally the delay in their appearance gives rise to false hopes of a permanent cure, often rudely dispelled by an unexpected outbreak, or perhaps by the transmission of the disease to an innocent person."

Fournier, perhaps the most eminent living syphilographer, has recorded a case which bears most strongly upon the question under consideration. A female child, six years old, was said to have been infected with syphilis, during an attempt at rape. She had marked vulvitis, and upon the labia three grayish, shallow, indolent, indurated ulcers covered with a diphtheritic-looking membrane, and raised a little above the general surface. In both groins there were enlarged, multiple, lymphatic glands. He positively diagnosticated chancre, but, conforming to his custom in medico-legal cases, declined to testify for a few days. During this time, under a simple dressing, the symptoms disappeared, and the patient, who was carefully observed for several months, never showed any subsequent signs of infection. Fournier believes that the case demonstrates that small inflammatory lesions may so closely resemble chancres as to deceive the most experienced surgeon, and adds that in medico-legal cases the diagnosis should not be made upon the local lesions alone, but should depend upon the development of constitutional symptoms.

It would be easy to multiply evidence to this effect, and I could from my own case-books give many examples of cases in which, if compelled to give an opinion, based upon the appearance at a given time of the local sore, I should have made the diagnosis of syphilis, although delay has, fortunately for the patients, demonstrated the innocent character of their troubles. Mr. Hutchinson, to be sure, says, with characteristic candor, that he must admit that the gross total of cases of primary syphilis which has been under his care has not been so much as that which falls to the share of specialists, particularly those holding hospital appointments, and that more patients come to him in the secondary stages than in the primary. This probably accounts for his somewhat too sweeping recommendation as to the early employment of mercury.

The surgeon who is daily called upon to give an opinion in cases which involve the whole future of the individual, his relations to the other sex, his determination toward celibacy or matrimony, his matrimonial relations if he should be already married, the question of the influence of paternity, the institution of a course of treatment extending over years, the diagnosis of any obscure visceral troubles which he may develop later in life, the profoundly depressing mental effect which a knowledge of syphilitic infection usually has upon intelligent people—the surgeon, I say, who remembers

these facts and recalls the views which I have above cited, as to the possibility of error, should surely hesitate about beginning a course of treatment which will possibly obscure or render altogether impossible the diagnosis.

While I am not disposed in the least to agree with those who believe there is positive advantage in delay as regards the subsequent course of the case, yet I do not think, on the other hand, that the gain from the immediate treatment during the primary sore is sufficient to counterbalance the doubt and uncertainty which that treatment often throws about the future life of the patient. It has been my custom to advise my pupils never to begin constitutional treatment for syphilis, unless they were prepared to swear positively and to demonstrate that that disease existed, and certainly the cases are comparatively rare in which a careful surgeon would be willing to take this position during the existence of the primary sore alone. I have recognized both in my teachings and practice a few necessary exceptions to this rule, which may be included under the following heads:

1. Where confrontation is possible and the sore is distinctly a typical one.

2. Where with a similar sore its continued existence would destroy or imperil the conjugal relations of two people or possibly the happiness of an entire family.

3. Sores with characteristic induration, but with marked tendency to spread and involve important regions.

4. Sores in such conspicuous positions, as upon the lips or the nose, that their continuance would involve a general knowledge of the patient's condition.

With these exceptions I still believe, in spite of Mr. Hutchinson's teachings to the contrary, that it is the part of wisdom to wait until the development of glandular enlargement at some point removed from the initial lesion, and not, therefore, by any possibility a result of simple adenitis, demonstrates the constitutional character of the trouble. It is not necessary to wait for the syphilodermata. Treatment may be safely begun when, after a suspicious sore upon the genitals, consecutive enlargement of the epi-trochlear or post-cervical lymphatics takes place, and, beginning at this stage, I can cordially endorse all that Mr. Hutchinson claims for a mild continuous mercurial treatment as to its effects in suppressing or "aborting" subsequent symptoms. The argument which I have used as against the mercurial treatment of chancre applies with equal force to the local abortive measures which have from time to time been recommended. These include cauterization; excision; antiseptic measures; and various local applications of mercurial preparations by means of ointments, hypodermatic injections, or otherwise. Taking them in the order mentioned, their relative advantages and disadvantages seem to me to be as follows:

As to cauterization, it appears to me unquestionable that it can be of service in but a very small proportion of venereal sores as they usually come under the notice of the practitioner. The publication of certain cases, such as the well-known one of Mr. Hill, who cauterized the torn frænum within twelve hours after the accident, and in whose patient syphilis developed at the usual time, and that of Clerc in proof of the uselessness of immediate ablution, has had a marked effect in influencing professional opinion upon this matter. The teachings of Ricord and Sigmund, who believed that cauterization within five days after contagion certainly prevented infection, have long since been shown to be misleading, as in those days local sores were not clearly differentiated from infecting chancres.

Sores which appear within five days after intercourse are rarely or never syphilitic, and this fact at once throws out 99 per cent. of Ricord's and Sigmund's alleged successful cases. In the remainder, in which cauterization was immediately applied, as in Mr. Hill's case, to a tear or abrasion during coitus with a person known to be syphilitic, there is, of course no certainty that the disease would have developed even if no local treatment had been adopted. The opinions of syphilographers vary greatly in regard to the value of this form of treatment. Keyes peremptorily rejects it as useless and unphilosophical with the remark that no amount of cauterization nor any local treatment can prevent the development of general syphilis after the poison has once been absorbed much less after the chancre has appeared. Hill and Cooper think it wiser to assume that we cannot indicate any period at which syphilis is a local disease which can be extirpated by local treatment. Bumstead and Taylor believe that chancre is never a mere local lesion.

On the other hand, Mr. Hutchinson finds it difficult to believe that absorption of syphilitic virus is so rapid that there is no stage during which it remains limited to the seat of inoculation, and prefers to act as if this stage comprises the first week or ten days after contagion. Jullien remarks that, in spite of theoretical considerations as to the rapidity of absorption of the virus of syphilis, or of other contagious diseases, he still thinks we have no right to neglect whatever small chance may be offered by the employment of cauterization whenever the sore is seen during the first three days. Cornil says that we are not in possession of absolutely conclusive evidence upon this point, but that it is highly probable that the syphilitic virus inserted under the skin remains there a certain length of time without any other action than gradually to change the cells which are in immediate relation with it, and slowly

to prepare them for the hyperplasia which soon constitutes the chancre. Auspitz, Unna, and Kölliker believe that the initial indurated sore is not to be considered as a symptom of general infection. The experience of the latter authors in the excision of chancres has encouraged them to believe that, in a small proportion of cases, general contagion may in this way be prevented.

Familiar with these opposing views, and striving to find a safe general rule for practice and teaching, I have for a long time thought it best to assume that a sore seen within a few days after its appearance, and as yet unaccompanied by any enlargement of the inguinal glands, was still a localized lesion. If favorably situated—*i. e.*, upon the skin of the prepuce or of the genitals—I have advised its removal by excision, and in a large number of cases have practised it, picking up the sore and surrounding tissue with a pair of toothed forceps, and removing it by a single sweep of the knife, or by means of scissors curved on the flat, afterward dressing the wound with iodoform or boracic powder. When the patient refused this treatment, or when the sore was so situated that its removal would cause considerable pain, hemorrhage, or deformity, I have employed destructive cauterization with fuming nitric acid.

As regards protection from subsequent constitutional disease, my results have, on the whole, been unsatisfactory; but in a few cases—five, all told, with two more which are yet doubtful—I have succeeded in making my observations under unusually satisfactory circumstances. In these cases the patients came to me promptly upon the development of the sore, and sent to me, for examination, the women with whom they had had connection; evidence of syphilis being discovered in the latter, I excised the sores of the male patients, and cauterized the resulting wound with nitric acid. In three of these cases, microscopical examination by my friend, Dr. Simes, showed that the sores possessed the usual characteristics of hard chancres. In one of them slight glandular involvement had already shown itself; in the others it had not yet appeared. The shortest period intervening between the appearance of the sore and my inspection of it was twenty-four hours, the longest five days. In two of the five cases, including the one in which there was slight glandular involvement, no further symptoms have ever developed; in the remaining three the appearance of constitutional symptoms was delayed from three to five weeks beyond the usual time, just as is the case from the mercurial treatment of chancre. The other two cases which I have mentioned are now under observation, and I have, within a few hours, had the opportunity of observing another interesting case of tear of the frænum during a suspicious intercourse.

It is only fair to add that, during the time I have been making these observations, I have had several cases in which excision was not performed on account of the anatomical seat of the sore, which I yet believed to be almost certainly specific, but which healed, and disappeared without the development of the slightest constitutional trouble. In these latter cases, however, I had no opportunity for confirming my diagnosis by confrontation. In all cases (and these comprise the majority which come for treatment) in which a week or more has elapsed since the development of the sore, and in which involvement of the dorsal lymphatics of the penis, and the inguinal lymphatic glands is observable, I reject cauterization as a routine method of treatment, on account of its undoubted uselessness at that stage in preventing constitutional disease; the pain which it causes; the inflammatory action which follows it, and which often produces enough œdema and swelling to cause phimosis, and thus convert an open sore into a hidden one; the subsequent effusion of lymph, which simulates true induration and confuses the diagnosis; and, finally, the greater liability to the production of suppurative action in the ordinarily indolent bubo of syphilis.

It seems to me that by this plan of treatment I have given my patients whatever small chance there may be of avoiding constitutional disease, while at the same time exposing them to the minimum degree of local pain and disturbance. The so-called aseptic treatment of the initial lesion of syphilis seems to me a misnomer, so far as the essential character of the sore is concerned, unless it be meant to include only the thorough destructive cauterization of all portions of the infected tissue. Applied simply to superficial dressings placed over the chancre, it can refer only to the prevention of the development of pyogenic organisms upon the surface of the sore. As to the tendency of infecting chancres to suppuration is usually very slight, and their local significance is generally unimportant, we can hardly look here for advantages from the employment of aseptic or antiseptic methods which are at all commensurate with those obtained by the same methods in ordinary surgical conditions.

The method recently recommended by Dr. Edward Bronson, of New York, the local treatment by hypodermatic injection of mercurials beneath the base of the initial lesion and into the mass of the indurated lymphatic glands, is based almost exclusively on theoretical grounds. It appears to rest upon the view that mercury acts as an antidote when brought directly into contact with the syphilitic germs, and that this influence would probably be especially active if the drug were brought to bear directly upon the local lesions which are the foci of infection during primary syphilis. If we believe that the virus remains localized for a time after inoculation, and is not disseminated through the general system, and that mercury acts by its germicidal

influence, this treatment is not unphilosophical, but seems manifestly inferior to the more thorough plan of excising both the chancre and the enlarged lymphatics of the groin. The latter procedure would be less likely to result in local troubles, such as abscess or cellulitis, and would certainly be more effective.

My views upon the general subject of the abortive treatment of syphilis may accordingly be expressed as follows:

I. While it is unquestionably desirable to begin mercurial treatment at the earliest proper moment, and while that treatment undoubtedly either suppresses or renders milder the subsequent secondary manifestations, and while there is every reason to believe that in this way the liability to later or tertiary lesions is somewhat lessened, nevertheless the sum total of these advantages does not warrant the employment of mercury one moment before the diagnosis of constitutional disease is absolutely assured.

II. While in many cases that diagnosis can be made with a high degree of probability from the appearance of the primary sore alone, yet it cannot be said that all possibility of error is excluded until some general symptom, such as the enlargement of distant lymphatic glands, has shown itself.

III. The administration of mercury during the existence of the primary sore, unaccompanied by general symptoms, for the purpose of suppressing or "aborting" syphilis, is not, therefore, justifiable, unless by confrontation the diagnosis can be confirmed, or unless there are urgent and unquestionable reasons for securing rapid cicatrization of the chancre.

IV. It is proper to employ cauterization or excision according to the site of the chancre, in cases in which it is seen very soon after its appearance, and especially when it is known to have followed intercourse with a syphilitic person. The chances of preventing constitutional infection in this way, while very slight, may yet be considered sufficient in such cases to counterbalance the disadvantages of the method, such as pain, swelling, the production of phimosis or of suppurating bubo, and the obscuring of the diagnosis by the resulting inflammatory exudation.

V. Aseptic or antiseptic measures, while harmless, cannot be considered especially indicated in the local treatment of chancre, and can, in all probability, have no true abortive influence.

VI. The local use of mercurials, hypodermatically or by inunctions, is perhaps worth a trial, but it is probably inferior to the more radical methods, based essentially upon the same principles, namely, excision and cauterization.

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MEDICAL PROGRESS.

The Prevention of Puerperal Fever.—DR. C. J. CULLINGWORTH, in his introductory address at St. Thomas's Hospital, at the opening of the session, showed by statistics that, by the use of antiseptic measures puerperal fever has been almost entirely banished, and it has come to be regarded as quite an unusual event for a patient's temperature during convalescence to exceed 100° F.

In the face of such results as these, it is surely time to give up talking about an autogenetic variety of puerperal fever. The precise character of the antiseptic measures to which these wonderful results are due, varied in different hospitals, and varied, too, in the same hospital from year to year. It would, therefore, serve no good purpose to attempt to describe them in detail. The object at which they all aimed was the same, namely, the exclusion of pathogenic microörganisms from the genital passages. As to the best methods of effecting this object, there is, no doubt, still some difference of opinion. The best authorities, however, are quite agreed:

1. That the fundamental rule in antiseptic midwifery, the neglect of which renders all other measures futile, is to insure perfect antiseptic cleanliness of the hands of the attendants, of any instruments or appliances that may be required, and of everything that is liable to be brought into contact with the genital passages.

2. That the most efficient antiseptic for this purpose at present known is corrosive sublimate.

3. That the best method of insuring antiseptic cleanliness of the hands is to wash them thoroughly with soap and warm water, using a nail-brush vigorously, and then to rinse them carefully, again with the help of a nail-brush, in a solution of corrosive sublimate, 1 in 1000.

4. That if the patient has been already examined without antiseptic precautions, the vagina ought to be irrigated with a germicide solution as a preliminary proceeding.

5. That if, for the foregoing or any other reason, sublimate irrigation be employed, care should be taken to avoid any of the solution lodging in the passages, lest the patient be mercurialized.

With regard to the desirability of sublimate irrigation as a routing practice before and after delivery, opinions vary. It cannot be denied that some of the most brilliant results hitherto obtained have been obtained by those who regularly practise sublimate irrigation. On the other hand, however, there is the experience of the hospitals of New York and Boston, where the crowning success was achieved after irrigation, as a routine practice, had been entirely abandoned. Moreover, it must not be forgotten that several cases have been recorded in which sublimate irrigation has resulted in fatal mercurial poisoning. For the ordinary douching of the vagina during the puerperal period, the simpler and non-poisonous antiseptic solutions are, in Dr. Cullingworth's opinion, quite as efficacious as the more powerful ones, and infinitely less dangerous; but as a disinfectant for the hands, instruments, and other appliances, corrosive sublimate is perfectly free from danger, and at present stands unrivalled.

The essential antiseptic measures are very simple, and their habitual employment is by no means burdensome. A pint of corrosive sublimate solution of the proper

strength (1 in 1000) can be prepared in a minute or two from a ten-grain powder, a dozen of which can be put in a little box, and carried in the pocket. In the powders supplied by his direction to the obstetric clerks in connection with the maternity department at St. Thomas's, the ten grains of corrosive sublimate are mixed with fifty grains of tartaric acid and a grain of cochineal. The tartaric acid increases the bulk of the powder and, what is more important, lessens the risk of a portion of the mercury being lost by precipitation, either from being formed into an insoluble albuminate, or from the alkalinity of the water, as in the case of London. The cochineal is, of course, merely a coloring agent to prevent the solution being mistaken for anything else.

A solution of corrosive sublimate does not, like solutions of potassium permanganate, lose its antiseptic property after being once used. It is, therefore, usually sufficient to prepare a supply on entering the lying-in room, to renew it when the labor is over, and afterward to prepare a fresh solution once a day. The solution should be placed in a small bowl on the washstand by the side of the washstand basin, and kept there, ready for immediate use, from the time the first internal examination is made to the end of the puerperal week.

The best antiseptic lubricant with which we are at present acquainted is a solution of corrosive sublimate in glycerin, 1 part to 1000, and this also can be easily carried about in a suitable and well-secured bottle.—*British Medical Journal*, October 6, 1888.

The Treatment of Phthisis with Calomel.—DOCHMANN, in the September *Therapeutische Monatshefte*, relates his experience with the use of calomel in phthisis. Administered in the first and at the beginning of the second stage, calomel improves the appetite, diminishes the cough and fever, and dispels the night sweats and the objective symptoms. At the end of the second and at the beginning of the third stage, it reduces the fever, checks or diminishes the diarrhœa, and improves the general condition. Whether calomel has a specific action upon the local changes in the lungs or influences the life and development of the tubercle bacilli or checks the progress of the destructive process, only more extensive observations can determine, The following formulæ may be used:

℞.—Hydrarg. chlorid. mitis . . grs. x.
Pepsini . . . . . 3j.
Tinct. opii . . . . . gtt. xxx.—M.
Ft. pulv.
Dein adde
Ext. phellandrii aquatic., q. s. ut ft. pil. No. 60.

℞.—Hydrarg. chlorid. mitis . . grs. x.
Pepsini . . . . . 3j.
Ergotine (Bonjean's) . . grs. ij.
Ext. glycyrrhizæ q. s. ut ft. pil. No. 60.

For hemoptysis:

℞.—Hydrarg. chlorid. mitis . . grs. x.
Pepsini . . . . . 3j.
Ext. hyoscyami . . . grs. ix.
Ext. phellandrii aquatic., q. s. ut ft. pil. No. 60.

On the first day the patient takes six pills (two at intervals of two hours), on the second day five, on the third day four, and from the fourth day he takes two pills, thrice daily, throughout the period of treatment. Every fifth or sixth day, the calomel is intermitted for two or three days, during which time iodide of potassium may be given. The size of the first dose depends upon the fever; should the fever increase, the dose of calomel is increased to twelve to fourteen pills a day.—*Wiener medizin. Presse*, No. 39, 1888.

Creasote in Phthisis.—KEFERSTEIN recommends the following formula:

℞.—Creasot. . . . . 1.3 parts.
Spirits of wine . . . 25 "
Cinnamon water . . 100 "
Syrup of cinnamon . . 25 " —M.

One commences by administering three teaspoonfuls during the day. Each week the dose is increased one teaspoonful.—*Gazette Médical de Paris.*

Use of Antipyrine in the Nasal Passages.—DR. F. WHITEHILL HINKEL reports (*New York Medical Journal*, Oct. 20, 1888) four cases treated by antipyrine spray and summarizes his experience as follows:

1. A solution of antipyrine possesses hæmostatic properties when sprayed into the nose, though not superior to cocaine.

2. Antipyrine in about four per cent. solution may be used upon the nasal mucous membrane with temporary relief to occlusion from engorgement of the turbinates, and with sedative effects upon irritable states.

3. It is most effective where the element of irritation exceeds that of inflammation.

4. It presents an advantage over cocaine in not producing local numbness and dryness, and in the absence of the general stimulating properties of cocaine, causing sleeplessness, headache, etc. In cases such as hay fever, in which an agent of relief is used for long periods, antipyrine as a nasal spray is less likely than cocaine to produce constitutional disturbance or to lead to a "habit."

5. Antipyrine presents the disadvantage of causing more or less severe smarting, and being unequal to the relief of severe inflammation or severe occlusion of the nares.

6. Its antiseptic and stimulant properties will probably make it serviceable as an application to fresh wounds and to granulations and ulcerations in the nasal chambers.

7. Combined with cocaine, it increases the local action of the latter, enabling it to be used in weaker solution.

Ether for Pediculi Pubis.—In the *Monatshefte für praktische Dermatologie* it is proposed to destroy pediculi pubis by a single application of ether in spray. This procedure is less injurious to the skin than the application of chloroform, which likewise accomplishes the same object.—*Deutsche medicin. Wochenschr.*, September 20, 1888.

Calomel and Digitalis in Cirrhosis of the Liver with Ascites.—While calomel is used with general success as a diuretic in cardiac and renal diseases, opinions are divided as to its employment in cirrhosis of the liver. Upon the suggestion of Senator, DR. SCHWASS (*Berlin. klin. Wochenschr.*, No. 38) has used calomel and digitalis for ascites following hepatic cirrhosis, with extraordinarily fortunate results. In the case of a forty-five year

old man, who had been in the hospital ten months, requiring puncture at least twice monthly to evacuate the fluid which collected in the peritoneal and right pleural cavities, the ascites disappeared upon energetic treatment with calomel in conjunction with repeated punctio abdominis, and the patient in a few weeks recovered to such a degree as to be able to leave the hospital. Temporary benefit was attained in the grave complications of cirrhosis with organic heart disease, nephritis, and tubercular peritonitis. The combination of calomel and digitalis possesses greater advantages. It often acts beneficially when one or the other alone fails. A further advantage is, that with the simultaneous administration of digitalis calomel is borne better and for a longer period—that is, its unpleasant secondary effects, ptyalism, stomatitis, and gastro-intestinal catarrh, either do not appear at all or appear only in a mild degree, or at a later stage than common. A grain and a half of calomel and three-quarters of a grain of digitalis are given every three hours for a week. It is an advantage if the cases are treated early. In advanced stages of the cirrhotic process permanent benefit can scarcely be expected. Based upon numerous observations Schwass makes the recommendation, in suitable cases of ascites from hepatic cirrhosis—that is, when no complication with grave disorder of some other organ exists, excepting affections of the heart, and when the disease has not yet entered upon the last stage, that an attempt be made with calomel and digitalis to prolong life, perhaps with a restoration to activity.—*Wiener medizin. Presse*, No. 40, 1888.

Ergotine in Enlarged Spleen.—FANIA reports the case of a patient suffering from a greatly enlarged spleen, due to malaria, in which that organ resumed its normal size after the hypodermatic injection of ergotine.—*L'Union Médicale.*

Parotiditis.—

℞.—Phenic acid . . . . . gr. viij.
Quininæ sulph. . . . . ʒss.
Acidi salicylici . . . . . ʒss.
Rum . . . . . ʒiv.—M.

One-eighth of this to be taken every hour or two in the very severe forms of parotiditis.

Tar-water for Hemorrhage.—DR. CORNEILLE DE SAINT MARC has found tar-water as useful in hemorrhage as hamamelis and other hemostatics. It is best given in quantities of an ounce to an ounce and a half in twenty-four hours, in hemorrhages from the lungs, nose, or uterus. The remedy is even said to be useful in advanced phthisis with severe hemoptysis.—*Deutsche medicin. Wochenschr.*, September 20, 1888.

The Preparations of Sozoiodol.—DR. LANGGAARD (*Therap. Monatshefte*) reports the result of his experience with the preparations of sozoiodol. He used the soluble sodium salt and the free diiodo-paraphenol-sulphonic acid, for which he proposes the name sozoiodolic acid. It was shown that the acid or the sodium combination, in solutions of one-half to one per cent., retards the development of the micrococcus of suppuration. Two per cent. solutions entirely check the development. Experiments upon rabbits demonstrated that fifteen grains of sozoiodol-sodium have no toxic effect. In the antiseptic treatment of wounds, besides the free acid, the sodium, potassium, and aluminium combinations were principally used, which, on account of their non-toxic quality and absolute tastelessness, may be preferred to other antiseptics in common use. Of the sodium and aluminium combinations, which are readily soluble, or of the free acid two to three per cent. solutions in water may be employed. The same means may also be adapted to the impregnation of dressings, such as gauze and cotton. When a slow, prolonged action is desired, the sozoiodol-potassium commends itself for its slight solubility, sprinkled in a finely powdered state, either alone or with talc or sugar of milk, five to ten per cent. ointments of sozoiodol-sodium, potassium, aluminium, or zinc with lanolin; for insufflation, sozoiodol-potassium and sodium, alone or with sugar of milk, sozoiodol-zinc, ten per cent. with sugar of milk, sozoiodol-mercury, four to ten per cent.—*Wiener medizin. Wochenschr.*, No. 40, 1888.

Pleural Surgery.—T. PRIDGIN TEALE expresses himself in the following remarks regarding operations which involve the pleura. He thinks "we are losing our fear of exposing the pleura and the lung, just as we have learnt, step by step, how to deal boldly and safely with the peritoneum.

"The evil of admission of air into the pleural cavity is not the mere exposure of the pleural surface to the air, is not that the lung collapses by the mere admission of the air, but that where there is a fairly healthy lung and pleura, the inrush of air reduces to a serious extent the mechanical power of the thoracic wall over the function of inspiration.

"That in cases in which this mechanical difficulty threatens the life or impedes the recovery of the patient, surgery must decide upon the best method of closing the wound to the inrush of air whilst allowing adequate drainage of any pus cavity to be carried on.

"That the region of the diaphragm is a situation in which abscess amenable to surgical treatment frequently occurs, such abscesses often commencing below the diaphragm, and tending to discharge through the diaphragm and through the lung.

"It seems probable that such abscesses can be more safely attacked through the lower angle of the thorax, provided there be dulness at the seat of puncture, than through the abdominal wall.

"As to washing out the cavity of a large pleural, or pulmonary, or hepatic abscess, it is probable that antiseptic washing is of value in the early period, whilst the cavity is offensive; but that, as soon as the secretion has become sweet, washing is not only unnecessary, but tends to disturb the comfort of the patient, and retard his progress. If drainage be effective, so that fluid does not lodge, the fluid, which is sweet when secreted, should escape from the cavity before it has time to deteriorate.

"As to the question of excision of portions of rib in treating empyema, on this point he is unable to speak from personal experience. The tendency of surgical opinion seems to be rather to reserve it for special and exceptional cases than to make it a general rule of practice."—*British Medical Journal*, Oct. 13, 1888.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, OCTOBER 27, 1888.

HÆMOGLOBINURIA.

NOTWITHSTANDING the enormous amount of clinical and pathological work which has been expended during the last ten years on the subject of paroxysmal hæmoglobinuria, and on the hæmoglobinæmia of which it is a symptom, we are yet ignorant of its essential cause. The action of cold, or of prolonged muscular effort, as exciting causes is, it is true, well understood; but why a small proportion of individuals should be subject to transient alterations in the blood so profound, from the action of insignificant causes, "chasing the royal blood, with fury, from his native residence," remains to this time wholly unexplained. Nor do we, in point of fact, possess any reasonable hypothesis concerning the causation of this condition, for the analogy of the hæmoglobinuria following the administration of certain drugs and the transfusion of blood, helps us not at all to the discovery of the essential nature of the *materies morbi* of the paroxysmal form.

Still further work must be done ere our knowledge of hæmoglobinuria shall have become complete. The direction of that work appears to lie in a closer, more exact, and more minute investigation of individual cases. An excellent example of such work is to be found in a recent valuable paper by PRIOR, of Bonn (*Munch. med. Woch.*, July 24 and 31 and August 7, 1888). The subject of the investigations upon which Prior's paper is based was a man forty-three years of age, without history of syphilis, but who, while under observation, developed pulmonary tuberculosis, of which he finally died. Twelve seizures were duly studied. Of these, eight began with a distinct chill, one with well-marked fever, three without decided prodromes. The exciting cause on five occasions was exposure to cold; on three, unusual bodily exertion; once, exertion and wetting; on three occasions there was no discoverable cause. Ten of the attacks were accompanied by fever, the rise of temperature reaching in the course of an hour 102° to 104° F. The duration of the febrile movement varied from one and a half to eight hours, the average being five hours. In two instances the hæmoglobinuria was unattended by rise in temperature. The reaction of the urine in all the attacks was acid. In this respect the case differs from instances recorded by Rosenbach and Fleischer, who noted neutral and alkaline reactions. In eight of the twelve paroxysms the coloring matter of the blood appeared as methæmoglobin, twice as a mixture of methæmoglobin and oxyhæmoglobin, and twice as oxyhæmoglobin alone. The hæmoglobin, as a rule, made its appearance in the urine about the time the temperature reached its maximum, the amount being greatest when the fever was most intense, or in the beginning of the crisis. The more intense the chill and the higher and more prolonged the fever, the more abundant and long continued the excretion of hæmoglobin. The average specific gravity of the urine was about 1017, ranging from 1012 to 1021; its amount was somewhat diminished on the day of the attack, and increased on the following day.

During the paroxysms the urea and other solid constituents of the urine were also diminished, being again increased somewhat upon the following day. The form of albumen present in the attack was chiefly serum-albumen; to a much smaller extent paraglobulin. The proportion of albumen was determined at that period when, upon spectroscopic examination, the hæmoglobin was found to have disappeared; it was never great, not exceeding 0.3 per cent. In about half the attacks the spleen and liver were tender upon pressure and appreciably enlarged, in some instances being recognizable upon palpation. In one attack only was the spleen alone enlarged; this enlargement of these organs persisted some little time after the subsidence of the attack. In rudimentary paroxysms, in which there was hæmoglobinæmia, as determined by the presence in the blood of phantom corpuscles and corpuscular débris, without the presence of hæmoglobin or albu-

men in the urine, there was a likewise demonstrable enlargement of the liver and spleen. In two paroxysms there was icterus. During the paroxysms the heart's action was frequent, 140–150; pulse small; respiration disturbed, dyspnœa occurring even in those attacks unattended by elevation of temperature. Among the nervous disturbances were dulness, creeping sensations of the surface, contracted pupils, unsteadiness in movement. Upon the occurrence of the sweating stage the pupils dilated. Headache and vomiting are also to be regarded as indications of disturbances of the general nervous system.

There can be little doubt that in paroxysmal hæmoglobinuria brought about by the action of cold or prolonged muscular effort, the symptoms are caused by some autogenous chemical substance, rapidly developed and acting as a poison; the action of this substance upon the blood is analogous to that of chlorate of potash, carbolic acid, or foreign blood introduced by transfusion. It not alone deprives the red corpuscles of their coloring matter as does glycerine, but it also destroys them. This substance and the hæmoglobin dissolved in the blood serum are in part disposed of in the liver and spleen, in part eliminated by the kidneys. What it is, remains to be determined.

THE SUPPRESSION OF SMALLPOX.

ACCORDING to the official records, smallpox has entirely disappeared from Philadelphia after having prevailed to a moderate extent for about six months. During this period there were 364 cases and 80 deaths, which makes the death-rate 21.97 per cent.

Immunity from this disease for a length of time, by removing the incentive of fear, has the effect of diminishing the number of vaccinations and of correspondingly increasing the number of susceptible subjects. Under these conditions, the introduction of a case, especially if it is not at once placed under proper restrictions, is very apt to spread the disease.

Variola was brought to Philadelphia by a workingman from Sheffield, England, in February last. The case was a light one, and its nature was not suspected until three children of the household were taken sick. By the unfortunate neglect of the physician in attendance, the disease was allowed to become distributed before the authorities were apprised of its existence. Had a notification of the first case been promptly made, the spread of the disease would, in all probability, have been prevented. The rigorous application of preventive measures uninterruptedly continued after the existence of the disease was discovered, had the effect of confining it within moderate limits, and of finally suppressing it. These measures consisted in vaccination, isolation, and disinfection. Twenty public vaccinators successfully vaccinated 25,000 persons in six months. In addition, many times this number of persons were vaccinated at private expense. At least fifty-five per cent. of the cases were isolated in a special hospital, and the remainder in their homes with the consent of a medical officer of health, and under his supervision. Disinfection was conducted under the direction of a trained official, aided by his subordinates. The immediate notification of cases, so important in the official management of contagious diseases, was secured by a stringent law, assisted by the pressure of public opinion.

The banishment of smallpox is theoretically practicable, but practical experience teaches us that its restriction is all that can be expected, even under the most perfect management. The prevention of no disease is better understood than that of smallpox, and yet the consummation of measures aimed at this object is constantly hindered by agencies over which there can be no absolute control. To stamp out the disease, early or late, requires the complete application, in all its details, of a perfect method, which, however well understood and scrupulously attempted, is hardly ever successfully accomplished. Hence it is that only approximate results are obtained, even under the best management, the success of these results, as in all undertakings, being commensurate with the correctness of the methods pursued and the timeliness and thoroughness of their application.

WOUND TREATMENT WITHOUT DRAINAGE.

EVER in modern times has it been the ideal of the surgeon to have wounds heal without subsequent disturbance or attention after the post-operation dressing has been applied. Manifestly this will never be possible for all wounds, but every day we see the range of this much to be desired innovation widen, and at no distant time we may confidently expect to heal a majority of our operative and traumatic wounds by primary intention, without either drainage or redressing. The present necessity for drainage is the greatest shortcoming of our ideal, but much valuable work is being prosecuted in that direction, and the near future may be expected to clear up

that which at present is probably misunderstood or falsely interpreted.

Perhaps chief amongst the recent workers in the direction of healing large wounds without drainage is RYDYGIER, who has been carrying on experiments upon quite an extensive scale (*Wiener med. Wochenschrift*, No. 18, 1888). He, of course, has only attempted thus to treat wounds which seemed favorable to his purpose, but it will be seen that this includes cases which might appear exceedingly unfit for healing without drainage. He concludes that such attempts should be strictly confined to wounds which we feel confident are entirely freed from all diseased tissues; that the most complete disinfection of the wound area must be practised before operation; that antiseptic irrigation must not be employed after beginning the operation; that all unnecessary sponging and other manipulation of the wound must be strenuously avoided, and that primary suture be employed, leaving small interstices here and there between the stitches which are to be allowed to fill with clot, and dry as rapidly as possible. Hence no protective is to be used, except in those cases in which the wound edges cannot be made nearly to approximate. Dryness, flat compression, and antiseptic protection are the features of the dressing and after-treatment. Drain tubes are directed to be introduced later, if the case should progress unfavorably; but, in Rydygier's hands, this was necessary in only about sixteen per cent.

He has been able to put this method of wound handling into successful use even in cases of hip-joint disease—surely a crucial test. The use of antiseptic—hence irritating—solutions upon the wound has been abolished, and, consequently, the main necessity for drainage (to carry off the immense ooze which is thereby produced) is done away with at once. Four cases of excision of large lymphomata of the neck have thus been dealt with, and thorough primary union secured, as likewise have breasts been excised, the scapula resected, tuberculous bones chiselled out, etc., with, in all, but sixteen per cent. of failures. The non-successes, however, were only partial, and in no wise affected the patient for the worse. The method has been found of especial value in cases of surgical tuberculosis, in which, heretofore, long healing drainage sinuses have been a serious drawback or cause of relapse.

THE Fifth Otological Congress will be held in 1892, at Florence.

BELLEVUE HOSPITAL, New York, has hitherto had no place of worship for its convalescent inmates other than the amphitheatre used by the students on week days. The corner-stone of the new Townsend Chapel was laid last week by Bishop Potter. The building will cost $25,000, and will embrace a free reading-room and library for the use of the patients and nurses.

DR. O. W. WIGHT, of Detroit, died October 12th, from typhoid fever. Dr. Wight was widely known through his vigorous administration of the health offices of Milwaukee and Detroit, and through his sanitary and medico-legal writings. He had been admitted to the bar previous to his entering upon the practice of medicine; to a mind widely versed in knowledge, he added acute powers of observation and an originality in the application of his learning.

LLOYD MORTON, M.D., of Pawtucket, R. I., died on the 16th inst., in the sixty-first year of his age. He died suddenly, of apoplexy, by which he was prostrated while in attendance upon a patient, to whose house he was called at 3 o'clock A.M.

Dr. Morton, the son of a physician, was born in Halifax, Mass. He was graduated from Brown University in 1844, and from the Woodstock (Vt.) Medical College in 1851. He had resided and practised medicine in Pawtucket since 1852. A widow and one son survive him.

The deceased was a prominent and respected citizen, and stood high in his profession. He joined the Rhode Island Medical Society in 1864, was elected president of the same in 1872 and again in 1873. Subsequently, he was a member of its Board of Censors from 1878 to 1883 inclusive. He was a man of pronounced opinions, and at the same time of kind and generous impulses. As a physician and surgeon he was experienced and successful.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 18, 1888.

THE PRESIDENT, A. JACOBI, M.D., IN THE CHAIR.

DR. M. ALLEN STARR read a paper on

APRAXIA AND APHASIA; THEIR VARIETIES AND THE MODE OF DETECTION OF EACH.

His object in the paper, he said, was not so much to present a review of our present knowledge regarding these affections, as to indicate the methods of examination to detect *all* the symptoms present in patients suffer-

ing from them. The division of disturbances of speech into the two great classes of sensory and motor aphasia, had been followed by a further subdivision into word-deafness, word-blindness, agraphia and motor aphasia, and paraphasia.

The accepted notion of to-day is, that every word in ordinary use has a complex mental substratum, which may be termed the word-image, made up of a number of memory-pictures. Each object would be found to vary from another in respect of the memory-pictures which form its mental substratum. It is a fundamental position that involved, in the accepted theory of cerebral localization, that memories are the residue of perceptions, and are, therefore, localizable in the regions of the brain concerned in perception. It followed that these memories forming the idea of an object or an action, being distinct from one another, might be lost by disease of the brain having a limited extent, and that the character of the memories lost would depend on the location of the disease.

For the general symptom of inability to recognize the use or import of an object, the term *apraxia* is now employed; and since apraxia is a symptom which is very frequently associated with aphasia, and which, in fact, may lie at the basis of aphasia, it should always be looked for in a patient. To test for apraxia it is only necessary to present various objects to a person in various ways, and notice whether he gives evidence of recognition. He may or may not be able to name these objects; the question in point is, Is it evident that the object awakens an idea in his mind?

Having stated that the variety of apraxia known as blindness of mind is the one most commonly met with, Dr. Starr related the case of it recently reported by Macewen, which was of especial interest as affording the first example of its successful treatment by operation. (*British Medical Journal*, August 11, 1888.) The angular gyrus was exposed by surgical procedure, and it was proved that a portion of the internal table of the skull had been detached from the outer, and had exercised pressure on the posterior portion of the supra-marginal convolution, while a corner of it had penetrated and lay imbedded in the anterior portion of the angular gyrus. Removal of the bone, the displacement of which was the result of an accident a year previously, resulted in complete recovery from the pain and mental symptoms from which the patient suffered.

The variety of apraxia known as deafness of mind had recently been studied by Oppenheim and others, who noticed that while some aphasics retained their musical faculties, others lost the power to follow melodies, to appreciate music, or to hum or sing the tunes which they formerly knew. In view of the observations that had been made regarding this point, it was worth while to test intelligent patients as to their musical faculties. Apraxia had as many varieties as there were organs of sensation, and the facts which had been collected in regard to the different forms were of great interest, not only as throwing light on mental processes of association, but as indicating that those processes were carried on in definite areas of the brain and in tracts which connect those areas, and could be arrested by disease in these parts. One fact of special interest had been brought out by Dr. Starr's study of the cases of apraxia which he had been able to collect, and that was, that the lesion has always been found in the left hemisphere in right-handed, and in the right hemisphere in left-handed, persons; in other words, in the same hemisphere lesion of which has produced aphasia. It was true that apraxia, like aphasia, had been noticed in cases of paretic dementia, in which the disease is diffuse and situated on both sides; but this fact would not imply that a unilateral lesion alone was insufficient to produce the symptom.

In nine cases of apraxia with autopsy collected by Dr. Starr, the variety which existed was that of psychical blindness, and accompanied the form of aphasia known as word-blindness. In all the cases the lesion involved the cortex of the supra-marginal and angular gyri, or the tracts posterior to those parts in the white matter beneath them. It was noticeable that this symptom of apraxia was always associated with some form of aphasia. Hence all cases of aphasia should be examined for apraxia. From the lesions observed, it would seem that at present we must locate our memory-pictures of objects on one side of the brain, and on the same side which presides over speech.

Dr. Starr then directed attention to the second set of memory-pictures which make up the word image. Each word, he said, was composed, as far as its own image went, of four separate memories, each of which might be lost separately.

1. If the memory of the sound of the word is lost, the memory cannot be called to mind, and cannot be recognized when heard.

2. If the memory of the appearance of the word is lost, the visual image of it cannot be called to mind or recognized, and the patient will be unable to read or to write spontaneously.

3. If the memory of the effort needed to pronounce a word is lost, a true paralysis of articulation occurs, though the muscles may not be weakened. This is the ordinary form of motor aphasia, due to a lesion of Broca's centre.

4. The independence of the effort-memory necessary for writing and connected with movements of the hand from the effort-memories of speech has been established. When these were lost alone the condition was known as agraphia. In such a state the pen could not be used. When a word could not be called to mind, it could not, of course, be written; but words could often then be written by dictation, if the person was one who was accustomed to writing much. Hence sensory agraphia and motor agraphia must be distinguished; the former being a part of word-blindness, the latter not at all associated with inability to read.

These forms of aphasia are due to a loss of distinct memory-pictures. These several memory-pictures which are united in the word-image might thus be reasonably regarded as separate from one another in their location in the brain. But since they *are* joined to form the word-image, it follows that the association-fibres joining the various areas are as necessary to the use of even a single word as the various areas with their memories. It is really by association only that an object or a word becomes a subject of thought or use. There is one form of aphasia in which the lesion is known to affect a great association-tract, viz., paraphasia, or the aphasia of conduction of Wernicke. In this condition the word-hearing and word-uttering process are perfect, but their connection is broken. The patient can understand what is said to him, and can pronounce many words well; but

he misplaces words, using one word for another. Such patients may even talk jargon. It is, therefore, evident that the processes of association should be most carefully tested.

In many cases of aphasia the symptoms are not such as to point to one of these pure forms of aphasia, but a combination of the characteristics of these forms will be found. The patient then had a mixed form of aphasia, in which both sensory and motor elements were combined. Still, in such cases, a thorough examination would demonstrate that one or the other pure form was present in excess, and this would indicate in which direction the lesion lay. The facts that all the various speech areas are supplied with blood by the middle central artery, and the frequency with which emboli lodge in this artery instead of plugging up a small branch of it, explain the frequency of mixed aphasia, and the rarity of pure forms—which are due to small areas of softening.

To examine an aphasic thoroughly, Dr. Starr said it was necessary to test:

(1) The power to recall the spoken or written name of objects seen, heard, handled, tasted, or smelt.

(2) The power to understand speech and musical tunes.

(3) The power to understand printed or written words.

(4) The power to speak voluntarily. Does he talk clearly? Does he mispronounce words? Does he misplace words? Does he talk jargon?

(5) The power to repeat a word after another.

(6) The power to read aloud. Does he understand what he reads?

(7) The power to write voluntarily. Can he read what he has written?

(8) The power to write at dictation.

(9) The power to copy.

(10) The power to recognize the use of objects seen, heard, felt, tasted, or smelt.

In conclusion, Dr. Starr read the detailed histories of two cases illustrating some of the varieties of aphasia described, and presenting points of special interest.

Dr. W. R. Birdsall said that this was unquestionably one of the most fascinating of all the separate studies of the nervous system. In the first case in which he had ever made out the diagnosis of aphasia independently, the patient was an ignorant fellow, who was accustomed to play the violin at dances. He was almost totally aphasic and agraphic, except that he could write "yes" and "no," and sign his own name. There was, however, no word-deafness or word-blindness; and the musical sense was not impaired to the slightest degree.

Dr. E. D. Fisher said that he saw one of the cases mentioned in the paper in connection with Dr. Starr, and he recalled very well the great difficulty that was experienced in getting at some of the points desired, especially in determining the presence or absence of hemianopsia. It seemed to him that in some cases there might be something more besides aphasia or apraxia. There was probably a general loss of intelligence represented by a cortical lesion not localized. Rather than a localized lesion, there was some interference with the whole sensorium. Another interesting point that suggested itself was whether the lesion might not sometimes be only in the association fibres, and at a considerable distance from the cortical centres. These fibres are the easiest means of transit, and it seemed to him that the question, whether the lesion was cortical or subcortical in any particular case, could only be determined by a post-mortem examination.

The President said that it appeared to him that the difficulties which Dr. Fisher had mentioned really did exist. Hence it is that some physiologists, like Goltz, are inclined to doubt the correctness of the cerebral localization now in vogue.

Dr. Starr said that all the diagrams, except his own, designed to illustrate aphasia (by Broadbent, Wernicke, Charcot, and others) had on them an intellectual centre, with which all the memory-centres are connected by converging lines. He did not believe, however, that there was any such thing as an intellectual centre independent of these other centres; nor did he think that there was any need of an intellectual centre. If intellectual centres did exist, they must, unquestionably, in accordance with the phenomena that had been observed, be situated in the same location as the memory centres. In regard to the point raised by Dr. Jacobi, he thought that physiologists are less liable to arrive at correct conclusions concerning cerebral localization than pathologists.

Section on Theory and Practice of Medicine.

R. C. M. Page, M.D., Chairman.

Stated Meeting, October 16, 1888.

Dr. Landon Carter Gray read a paper on

Neurasthenia; its Differentiation and Treatment.

He first directed attention to the fact that functional nervous diseases are largely disregarded by the general practitioner because of the modern development of the study of them, although the need of their proper classification is widely felt, especially by neurological specialists. For this reason it was that the writings of the late Dr. George M. Beard had had such a success in Germany. Dr. Gray did not believe that true neurasthenia is as prevalent as the followers of Beard would have us believe. He stated that in his opinion there are three forms of neurasthenia, the reflex, the lithæmic, and the simple. The reflex form is due to vicious habits and reflexes from non-nervous organs; the lithæmic is due to so-called lithæmia; and the simple form is that in which there is true nervous prostration. The points of differential diagnosis of these various forms were then dwelt upon. But neurasthenia is also to be differentiated from a number of nervous diseases—especially the early stages of the latter—such as the morbid fears (for which Dr. Gray suggested the name of functional insanity), and which really belong to the insane diseases; melancholia, especially the mild cases, in which suicide is often committed; the early stages of mild chronic forms of insanity; neurotic conditions in which the individual is subject to migraine, hysteria, angina pectoris, or anginoid attacks; the early stages of general paresis of the insane or of locomotor ataxia; and a peculiar affection described a year ago by Dr. Hughes Bennett and called by him muscular hypertonicity, in which the symptoms are those of weakness and exaggerated reflexes of the lower extremities.

The prognosis of these different forms is variable, depending upon the severity of the reflex cause, when present, and the possibility of thorough treatment. The

treatment of the reflex form is the removal of the cause, if possible. The lithæmic form is to be treated by moderate laxatives (the most satisfactory of which he had found to be the fluid extract of cascara sagrada), dilute nitro-muriatic acid (in twenty drop doses before meals), and, if the nervous symptoms are severe, by rest. In any case rest is a most important adjuvant, and should be proportioned to the needs of each particular case; it being better to have rather too much of it than too little. The diet should be regulated to a moderate degree by the entire withdrawal of either starchy or nitrogenous material for a short time, and then by cutting down the starchy material permanently by at least fifty per cent. In hot weather it is sometimes advisable to cut off the nitrogenous material for several weeks, and a complete change of air is often of the greatest benefit.

In the true cases of neurasthenia the best treatment is that advocated by Dr. Weir Mitchell, by rest, forced alimentation, massage, and faradism. Large doses of iron and malt extract should also be given with this treatment; the great difficulty with which is, however, that patients are apt to be disappointed at the loss of their muscular strength on first getting out of bed. It should be explained to them that this will gradually return; but great care is necessary with many patients at this period to prevent them from losing the flesh and red blood that have been gained. Galvanism is an agent of great value in all these forms of neurasthenia, and it should be used as early as possible, except when the case is to be put to bed. It should be applied by means of large sponges, one at the nape of the neck and the other on the dorsal spine; five to fifteen milliampères of electricity being used, and the sitting continued every day for from three to five minutes. Massage was an uncertain remedy, often irritating the patient, and was only to be used in connection with the rest treatment mentioned.

DR. E. N. BRILL said that but for Beard the affection, which is in reality only a convenient symptom-group, without pathological foundation, would never have been elevated to the position it occupies. Neurasthenia, as its name indicates, is simply exhaustion of the nervous system, and it may be dependent on any physical or mental condition which lowers the vitality of the individual. The trouble may originate in either local or general disturbances of the nervous axis. In general, he said, he was entirely in accord with the views of Dr. Gray.

DR. E. C. RIGGS, of St. Paul, said that in that peculiar sense of fulness of the head, scarcely amounting to pain, which Dr. Gray had mentioned in connection with lithæmic neurasthenia, he had found the bromides and ergot very efficient; while in the spinal type he had derived the most benefit from galvanism. Statical electricity, which he found was not looked upon with very much favor in New York at present, he had also used with good effect in many of these cases. It seemed to him to have a really useful application, but even if its effects are only psychical, as claimed by many, it might perhaps be well to use it with care in certain instances, just as Charcot employs hypnotism for its psychical influence. In the course of his remarks Dr. Riggs referred to the case of a young lady whom he believed to be suffering from neurasthenia; not being able to find any organic disease to account for the condition present. She continued to grow weaker and weaker, however, and afterward another practitioner made the diagnosis of a malignant tumor. At last she died and none of the organs was found to be diseased, nor were any new growths observed; the projection of the spine forward, in the patient's emaciated condition, having been mistaken for a tumor during life.

DR. W. R. BIRDSALL said that the term was one which had puzzled him not not a little—what to do with it, and whether he ought to use it or not. While he believed in neurasthenia itself, he said he often felt as if he were trying to cloak his ignorance in so designating a case. He recognized that it was insufficient for a class of cases sometimes met with. He thought, unquestionably, that we must admit a neurasthenic element in disease; yet at the same time when we attempt to apply it to a group of symptoms we find that it often fails. In many individuals the nervous tendencies predominate, and, as is well known, this is often the result of heredity, and it seemed to him that the great danger is in assuming that we have a congenital neurasthenic condition to deal with, when the symptoms are in reality due to local causes or merely temporary conditions. The class of cases which Dr. Gray called the lithæmic would probably comprise the greater number of these, and it is important that they should not be treated on the basis of an unstable or defective hereditary nervous system. The same difficulty is found in dealing with the insanities. If we are to use the term neurasthenia at all, then, he thought we should confine it to the class of individuals who suffer from hereditary defective nervous systems.

There was one point in which he did not quite agree with Dr. Gray. The latter had stated that in the class of reflex cases all that is necessary to do is to remove the cause. There is often, however, an acquired condition, the result of the reflex irritation, in which the whole nervous system is at fault. The removal of a local cause, whether about the eye, the nasal cavity, or elsewhere, is not always sufficient. In many cases we are also obliged to treat the individual for other neurasthenic symptoms cropping out in different forms. The classification of Dr. Gray was a convenient one, although it was difficult to make any classification that was wide enough. The first two forms, which were based on causation, were quite satisfactory. The third variety, simple neurasthenia, he did not altogether understand.

In the lithæmic class of cases there is a great field for study, and he was quite interested in Dr. Gray's treatment. The question of rest or of exertion for the patient was one which he thought must be specially determined in each individual case. In many instances increased activity of a kind entirely different to what the patient had been accustomed constitutes the most satisfactory means of treatment. Of the modes of exercise that may be tried, mountain climbing is undoubtedly one of the best. It secures a pure atmosphere, and increases respiration and the quantity of air taken into the lungs. In this way an amount of oxygenation and tissue-change is obtained which can hardly be brought about in any other way. The majority of these patients take very little exercise ordinarily, and it is important that the exertion made should not be too violent or prolonged. Another advantage of this moderate exercise is the mental occupation which it affords. Very few of the

cases are free from a hypochondriacal element, and the exercise of the muscles in tramping, rowing, etc., offers just that mild diversion which is needed, particularly if the patients are provided with the right sort of a companion, which is quite an important point. This hypochondriacal element is one of the most difficult to get rid of.

He stated that he had very little to say in way of criticism of Dr. Gray's paper. As he had said in the beginning, a large number of these cases do not belong to the hereditary class of unstable nervous temperament, but result from various causes in those who originally had no such tendency; among these causes being digestive troubles, business anxiety, emotional strain, rather than over-work proper, and sexual excesses, whether natural or unnatural. In the latter class of cases there was a peculiar unstable condition of the vasomotor system and often an exhaustion of all the nervous centres. This was an almost endless subject, and the question of therapeutics must be settled specially in each case. In conclusion, he said that if we use the term neurasthenia, he though it should be with the proviso that it is understood to comprise a group of symptoms which may belong to various conditions.

DR. WM. H. THOMSON said that he thought the term neurasthenia is a very impressive one to use sometimes to patients, but otherwise he abominated it. It was to be placed on the same level as tonic, a word that led to more bad practice than any other in medicine, because remedies which act in all sorts of different ways are all called tonics. Neurasthenia was not near as good a word as anæmia, which at all events implied one special condition, and he thought it could not fail to lead to bad practice. He supposed that he had a great many patients coming to him all the time who were the subjects of neurasthenia—at least, that is what they said that other physicians told them that they had.

When a patient comes to him affected with nervous debility without appreciable organic disease, he always puts to himself the question whether the individual is not suffering from one of four things, viz., virtual starvation, over-strain, some unnatural drain upon the system, self-poisoning. Those who were the subjects of virtual starvation (usually females), it would be found, ate no breakfast worth speaking of, and probably took for their other meals principally tea, bread, and sweets. They did not take sufficient food to maintain their respiration and circulation, and the rest cure was, therefore, the best for them. In the second class rest and food were required, and often a change of surroundings. In the third class the drain should be checked if it could be done, and the patient would get well. The fourth class, that of self-poisoning, was the commonest of all. Two patients that had recently consulted him would illustrate this variety. One of them suffered from cloudy mind, with insomnia at night and dulness during the day, and he was cured with bismuth, calumbo, and naphthalin. The other case was very similar, and was also cured by intestinal antiseptics.

It was only very recently, Dr. Thomson said, that, after paying special attention to various divisions of the organism in turn, we were coming back to that old part of the body which our forefathers used to regard as of so much importance, the bowels. At all times fermentations are going on in the intestines, and at the best moments of our lives putrid ptomaines are going into the kidneys, the liver, and other organs. He was entirely satisfied now that the symptoms which are called uræmic are not due to urea in the blood at all, since the patient exhibiting them may be freely passing urea of the kidneys all the while. The trouble with such patients as he was now speaking of was, that they were suffering from prolonged self-poisoning, resulting from a deficiency of the natural antiseptics of the intestines, viz., the secretions. This was the lithæmic neurasthenia spoken of by Dr. Gray. In its diagnosis the pulse and the urine were his particular guides. In all the first three classes to which he had referred, there was an extremely weak and compressible pulse; while in all the lithæmic cases there was the opposite of this condition. There was either fulness or high tension after meals. In the first three classes the urine was of low specific gravity, and either neutral or alkaline in reaction. In the lithæmic cases, while there might be a low specific gravity if the kidneys were involved, as a rule the specific gravity would be high at certain times of the day. The urine also contained a large amount of urates, and was acid in reaction.

As to the question of therapeutics, he had faith in only one real cure, and that was for the patient to go and camp out in a tent in the woods. This would entirely change the character of the pulse and urine, and would clear up the nervous symptoms more completely and satisfactorily than any other method of treatment. No affection of this kind is ever seen in the nomadic races who live in tents, or in any individual who breathes enough. The trouble is that we do not breathe enough, and this is especially true of women.

DR. A. JACOBI said that of late it had been the tendency in medicine to get rid, as far as possible, of all names given to symptoms merely. This was shown in such words as dropsy, paralysis, and even epilepsy. Neurasthenia is, in reality, less dispensable than any of these. We can speak of it properly as only a symptom, and it is a symptom common to so many conditions that the sooner it is gotten rid of the better. It is not simply weakness alone; we have been told that it is a chronic malnutrition of the nervous centres due either to various adventitious causes or to a hereditary tendency. But congenital neurasthenia does not exist alone. With it is associated weakness of the circulation and of the whole constitution. In every case of so-called neurasthenia, then, it should be our endeavor to make a diagnosis, if possible, of the original condition that gives rise to the symptoms met with.

As regards Dr. Gray's therapeutics, he thought that twenty drops of dilute nitro-muriatic acid were too large a dose, and he thought it much more philosophical to give this remedy after than before meals. In health lactic acid is present in the stomach during the first half hour after taking food, and in abnormal conditions there are fat acids, whose presence indicates an alkali rather than an acid.

DR. A. D. ROCKWELL said that although unprepared to discuss the question at length, he could not refrain from the statement that he believed in the existence of neurasthenia just as much as he believed in the existence of malaria. With limitations, the term is a valuable one, although he thought it had been very much abused. The most important point of differentiation was

between primary nervous exhaustion and lithæmia. As to the manner of dealing with the lithæmic condition, the only way was for the subject of it to find out for himself what he could eat and what he could drink, and how he must work.

DR. S. BARUCH said that he was convinced that there was a complex of symptoms which was best designated by the term neurasthenia. In its treatment the principal indication is to promote tissue-change, and perhaps the most valuable method by which to secure this is hydro-therapy. Many of his patients suffering from this trouble he directed to take a cold plunge bath every morning; care being taken to secure prompt reaction. He still believed in the term tonic also, and he thought the cold plunge is one of the most valuable tonics we have.

DR. E. D. FISHER thought that the term neurasthenia is a valuable one, as it is very convenient to use until our knowledge of nervous diseases has become more complete than it is at present. The principal objection to its employment is the danger of mistaking for the condition it implies some of the grave organic diseases, especially in the incipient stage. It is, therefore, necessary to be on our guard in this respect. As regards the treatment of neurasthenia, since it represents merely functional disturbances, so far as we know, uniformity is impossible, and each case must be handled according to its individual circumstances. Personally, he had found dilute nitro-muriatic acid a very useful remedy in a large number of cases, and he usually combined it with Fowler's solution. Whether it can be defended on theoretical grounds or not, he always orders it to be taken fifteen minutes before eating, and, given in this way, it has often proved successful in improving the appetite and digestion, and in removing the nervous symptoms.

DR. GRAY, in closing the discussion, said that one of his objects in writing the paper was to elicit such an expression of opinion from various observers as he had now listened to. On the whole, it seemed to him that there was a very immaterial difference between his own standpoint and that of some of the speakers who objected to the use of the term neurasthenia. There are certainly many symptoms not of organic origin which we cannot classify without resorting to some such expression. It is, therefore, of practical service to retain it, and the subdivision into the three classes which he had indicated seemed to him a convenient one. In the future such advances will no doubt be made, that many points which are now obscure will be cleared up, and many of our present views modified.

The question as to the proper way of using nitro-muriatic acid, that had come up, seemed to be very much like that of calomel. While physiologists claim that the latter has no direct action on the liver, practical physicians go on using it with very good results. It was an actual fact that, of all the drugs of which he had made use for the relief of the so-called lithæmic cases, the one that had proved of the most value was dilute nitro-muriatic acid, and he had found, by long experience, that it acted most efficiently when given before meals.

As to the question suggested by Dr. Riggs, whether those suffering from neurasthenia do sometimes die, he had known of three cases, although he had not personally seen any of them, in which this seemed to be the fact. All of them were in the hands of skilful and experienced physicians, and in two of them autopsies were made, nothing being found at the examination in either instance to explain the cause of death. All the three patients simply gradually sank from exhaustion after several years of suffering.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, October 15, 1888.

THE PRESIDENT, J. R. MACGREGOR, M.D., IN THE CHAIR.

DR. J. ADLER read a paper entitled

SOME REMARKS ON AKROMEGLIA.

He said that in 1886 Marie first described a new affection to which he gave the name of akromeglia. This designation, which simply meant enlarged extremities, was not very satisfactory, but it had now been generally accepted, and in our present total lack of knowledge regarding the pathology of the disease, it would perhaps answer as well as any other. Since Marie's paper had appeared, several cases had been reported in Europe, but the patient presented this evening was the first that had ever been known in this country.

She was a native of Germany, thirty-four years of age, married, and first came under observation in February last, at the German Hospital. Her mother had died from the effects of a fall, but her father was still living. She also had three brothers living, all in the enjoyment of robust health. She was strong and healthy, she stated, up to the age of eighteen or twenty, the time of the onset of her present trouble not being clearly remembered. She began to menstruate in her fifteenth year, but the periods were always irregular and at the end of three years disappeared altogether. She thought she was about twenty when she first noticed that her feet would swell from time to time, although a bandage or a tight-fitting shoe, she said, would always readily reduce the swelling. About this time she also noticed some enlargement of the submaxillary and other glands.

The patient was unable to give any exact account of the present abnormal growth. She was married in her twentieth year, and when she was twenty-three her wedding ring became so deeply imbedded in the tissues of her finger that it had to be removed with a saw. She suffered principally from pain in the back and weakness, and was also subject to frequent attacks of migraine. The pain in the back she attributed to a long ride, from the effects of which she never recuperated. She was unable to walk, and spent most of her time in a semi-recumbent position.

On looking at the woman, one was at once struck with the immense size of the head and the marked projection of the lower jaw. At the first glance, it looked like a case of myxœdema, or one in which there had been complete extirpation of the thyroid gland. The entire cranium was greatly enlarged, and the protuberance of the occiput was especially marked. The lower jaw was immense, and the tongue was greatly hypertrophied and flabby. There was no alteration in the teeth, except that those in the lower jaw were separated to some extent from each other; and the hair was abundant. All the

lymphatics of the neck were greatly enlarged. On a superficial inspection there was an apparent lack of the thyroid gland, but a more careful examination, especially during the act of deglutition, showed that the left lobe and the isthmus could be distinctly felt, although the right lobe seemed to be wanting. No trace of the thymus gland could be detected. The clavicles were markedly enlarged, especially at their sternal extremities. The ribs were also greatly enlarged, and beginning kyphosis and a peculiar bulging shape of the chest, due to their hyperplasia, could be observed. There was comparatively little adipose tissue at any point. The bones of the arm and forearm all showed enlargement of the extremities, and there was reason to believe that slight lengthening of the shafts had also taken place. The hands were immensely enlarged, although there was no deformity of the nails, as has been noted in some of the other cases of akromeglia. The muscles everywhere were flabby and atrophied. The skin was markedly hypertrophied, but remained for the most part soft and pliant.

The same general condition of affairs was found in the pelvis and lower extremities. The feet were enlarged even more than the hands, being simply colossal in size, and there was also enormous hyperplasia of the epiphysial region and the patellæ in the legs. It was noticed that there was marked hyperæsthesia in all the hypertrophied parts, even slight pressure causing the patient to wince. As regards the internal organs, a careful examination of the eyes with the ophthalmoscope revealed no organic disease. Repeated chemical and microscopical examinations of the urine showed no evidence of any kidney trouble, and the red and white corpuscles of the blood were both found to be normal in number and appearance, although to the eye the patient seemed anæmic. The heart and lungs and all the other organs, as far as could be ascertained, were entirely normal. The appetite was fairly good, but the bowels showed a tendency to obstinate constipation.

The electrical examination showed some departures from the normal. The resistance of the skin to the faradic current was enormous. Otherwise the cutaneous sensibility was not diminished. As regards the galvanic current there was considerable diminution of the electrical excitability, which was most marked in the peronei of both lower extremities. Still, there was no evidence of any degeneration going on in the nerves, and the want of electric excitability could well be explained on other grounds. There was evidence of well-marked psychic degeneration in the patient. She was described as having been a bright and lively girl, but she was now very dull and apathetic.

Dr. Adler then went on to make some general remarks on akromeglia, founded on the observations of European authorities. In most particulars, he said, this case corresponded very closely with those met with abroad, but there was one feature which was peculiar to it (being noted in none of the others), viz., the widespread hyperplasia of the lymphatics. As regards the post-mortem appearances in this affection, Klebs was the only author who had made anything like a satisfactory report. He had found a general hyperplasia of the connective tissue and marked proliferation of the bloodvessels. There was also enlargement of the various nerves, especially the ganglia of the sympathetic. In the brain he found well-marked hyperplasia of the hypophysis cerebri, and the question naturally arose whether there was any connection between the enlarged hypophysis and the enlargement of the nerves. Klebs was inclined to attribute the disease to the proliferation of bloodvessels, but this was purely fanciful and speculative, and at present the true pathology of akromeglia remained shrouded in profound mystery. As regards the matter of prognosis, this was not particularly bad so far as life was concerned. In Europe two of the cases which had been first observed as long ago as 1867 were still alive. In some of the cases there were abnormal conditions of the heart. In most of them the thyroid gland was diminished in size or apparently altogether lacking; but in two it was markedly hypertrophied, and was no doubt diseased. Amenorrhœa was a constant characteristic of the disease.

DR. W. R. BIRDSALL expressed the great pleasure it afforded him to see this case, the first of its kind ever reported in America. He did not think that he could throw any light on the pathology, though there seemed to him to be some mysterious connection between akromeglia, myxœdema, and extirpation of the thyroid. He said that he had at present under observation a young girl, suffering from amenorrhœa, who had developed some enlargement of the extremities of the phalanges of the hands, and, to a less extent, of those in the feet. It might, possibly, be an incipient case of akromeglia, but it was as yet too early to form a definite opinion in regard to it. As regards the electrical reactions in Dr. Adler's case, he thought we ought to be very guarded in drawing conclusions.

DR. ADLER said that it seemed to him that the hyperplasia in and about the nerves might of itself offer a sufficient explanation of the diminished electric excitability.

DR. A. L. CARROLL said that profound gratitude was due to Dr. Adler for the most admirable clinical demonstration which he had given of his unique case. Ever since he had first read an account of this new disease in the journals, he had been waiting in the hope that some one would find a specimen of it in this country, and it now afforded him extreme pleasure to have the opportunity of seeing the first one reported.

The question of treatment having been suggested, Dr. Adler stated that, in the total absence of knowledge of the cause of the disease, all treatment, so far as interfering with its progress was concerned, was without avail. The patient was simply kept in bed, and her functions regulated as well as possible. The attacks of migraine, to which he had referred, could always be efficiently combated with antipyrin.

DR. J. LEWIS SMITH presented a

CASE OF ATHETOSIS.

As this was a comparatively rare affection, he thought this case ought to go on record. The patient was a girl of eighteen in his service at Charity Hospital. Both her parents had died of consumption. She stated that she was well up to the age of seven years, when she had an attack of scarlatina, complicated with diphtheria. This was followed by general dropsy, and she said that it was at this time that she first noticed the paralysis of the left side of the body from which she still suffers. One year later the arm began to be drawn backward behind the body, and it could now be seen in that position, like

a rudder, with tonic contraction of the extensor muscles, and the fingers thrown far back. Soon after the appearance of the paralysis, the patient began to suffer from epilepsy. The attacks were for a time of the nature of *petit mal*, but had gradually grown more severe, and now constituted *grand mal*.

DR. M. ALLEN STARR, at the request of Dr. Smith, prepared a communication concerning the case, which Dr. Smith then read, in which he gave a *résumé* of some of the latest researches in regard to the condition here met with. In it he stated that he found that all recent writers mention athetosis as a frequent complication of spastic infantile hemiplegias connected with epilepsy. In this condition club-foot was apt to be present, as here, and the patient walked on the toes. Such cases presented undoubted evidence of an irritation carried down to the spinal cord from the cortex, and as there was irreparable injury in the cerebral centres, nothing could be expected from treatment.

DR. W. R. BIRDSALL, on the invitation of Dr. Smith, made a demonstration of the case. He first called attention to the fact that the face and the left side were involved slightly in the contracture. Sometimes, when she brought the affected arm forward with the other arm—an action which required considerable exertion, the foot, which was habitually inverted, would become inverted. At night, as was usually the case in such patients, during sleep, he had no doubt that the arm became relaxed. These cases are mostly instances of infantile hemiplegia, and all that he had observed had begun before the age of ten years. There could be no doubt that Dr. Starr's explanation of the pathological condition is the correct one. There is a destruction of tissue in the cortical areas, by reason of which the impulses from the brain are transmitted irregularly, and not in a coördinate manner. The condition varies from the ordinary contractures met with in hemiplegics, in there being more mobility, and it also differs from ordinary athetosis, in which there are more movements with but little contracture. It was, therefore, a mixed case. Athetosis, as is now well known, is a symptom of hemiplegia, and particularly infantile hemiplegia. In infants an athetoid condition of the fingers is normal, these members being constantly in motion, and the earlier the paralysis occurs, the more marked will be the athetosis. This case was almost the exact counterpart of one that he had seen in a boy who also was in one of the city institutions on the island.

DR. DANIEL BROWN read a paper on

THE ARREST OF SECRETIONS IN THE ERUPTIVE FEVERS.

He took scarlatina as the type, and said that it is not so much the drain itself that proves fatal as the accidents and sequelæ liable to attend it. There is a marked determination to the skin and the mucous and lining membranes, and unless the secretions can be kept in efficient operation, serious inflammations are likely to result from the congestion incident to the irritation produced by the poison in the system. He is in the habit of commencing his treatment with small doses of bromide of potassium or sodium, and tincture of aconite root, the object of the bromide being to allay nervous irritability, and of the aconite to diminish the frequency of the pulse. In a short time he commences the administration of carbonate of ammonium, which for the last twelve years he said he had regarded as his sheet-anchor in the treatment, on account of its stimulating effect on the secretions. The dose is very small, only one-half or three-quarters of a grain, and it is usually repeated every hour or so, in a solution containing elixir of cinchona. The skin is kept anointed with vaseline, and at night he often gives small doses of jalap and calomel, as advocated by Professor William H. Thomson. Under this plan of treatment he found that the eyes or ears are seldom affected, and kidney trouble seldom ensues as a sequela. The treatment, of course, varies according to circumstances in different cases; but the chief point that he always has in view is the maintenance of the secretions.

DR. CHARLES A. LEALE said that while he regarded scarlatina as an acute, self-limited, infectious disease, there is always a certain amount of deleterious matter in the system to be gotten rid of, and it is of great importance to pay attention to all the glands and secretions, so that the poison may be eliminated. He would certainly be much delighted if he could find a remedy which would act as a preventive of complications and sequelæ but he did not know of one at present. The carbonate of ammonium, so lauded by Dr. Brown, he should think would only add another foreign element to the blood, and he believed that pure water would be much more serviceable in keeping the secretory organs free.

DR. S. B. W. MCLEOD said that he believed that, as a general rule, the less medicine is given the better, though after the acute stage the tincture of chloride of iron is usually of service in shortening convalescence.

DR. C. S. WOOD said that it was to be borne in mind that the fatality of diseases like scarlatina varied very greatly in different epidemics. At present the scarlet fever met with in New York is of a comparatively mild type, and the percentage of deaths from it is very small, except in those cases accompanied with diphtheria, which seemed to be now the complication most to be dreaded. The views advocated in the paper he believed were correct, and he had always found that aconite in small doses had a good effect on the function of the skin. In all the zymotic diseases he had been in the habit, for the past thirty years, of employing hyposulphite of sodium after the first day or two, and he was convinced that the sulphurous acid which was set free from this compound had a most beneficial effect in counteracting the poison in the system, whatever it might be. In many cases of scarlet fever, it seemed to him that this remedy had not only the effect of modifying the severity of the disease, but also of actually cutting short the attack to some extent.

DR. FARRÍES thought that in scarlatina nothing fulfilled the indications better than aconite in small doses to lower the pulse, and a mild diuretic and sudorific containing buchu or uva ursi with a little sweet spirits of nitre. In addition, the surface of the body might be sponged every two or three hours with lukewarm water containing a little carbonate of sodium, for the purpose of reducing the temperature.

DR. LEALE said that in 1865, when he was in the army in Washington, where infectious diseases, particularly pyæmia and typhoid fever, were very prevalent a thorough trial was given the hyposulphite of sodium in this class of affections, and the conclusion was reached by the surgeons who experimented with it that it had no

appreciable affect upon them. In acute febrile diseases the two great objects are to eliminate and to maintain.

The President said that there were a certain number of cases of scarlet fever in which death resulted, not from any accident or sequela, but from the direct violence of the attack; the poison introduced into the system being so malignant as promptly to overwhelm the nervous centres and the powers of life like an avalanche. As regards the glandular system, there is always danger of trouble. For instance, in the kidneys, as the result of over-stimulation and over-action in eliminating a poison to which the organs are not accustomed, the epithelium of the glomeruli is apt to be thrown off, and in consequence of this tubular nephritis results. In the zymotic diseases in general, he thought other methods of treatment besides those aiming at securing elimination are often called for, and it is highly desirable that we should have at our command remedies which may act directly on the poison and have the effect of preventing fermentation. In conclusion, he said that in his experience he had found that, as a rule, any looseness of the bowels, whether occurring spontaneously or resulting from the use of cathartics, had an unfavorable effect.

Dr. Brown, in reply to the President, said that he did not by any means claim to cure all his cases. He quite agreed that the malignant cases referred to did sometimes occur; but in these he believed that if only a few doses of such remedies as the bromides could be given to allay the nervous irritability produced by the poison, there would result a certain amount of improvement, even if the effect was not sufficient to prevent a fatal termination; while in others, which would unquestionably prove fatal if left to themselves, death might be averted by the prompt measures adopted.

CORRESPONDENCE.

OPHTHALMOLOGY IN VIENNA.

To the Editor of The Medical News,

Sir: In a recent visit to the eye clinics of Vienna, I observed many little points in practice, especially in the technique of operative procedures, which may be of interest to ophthalmologists on this side of the Atlantic.

The principles of antiseptic surgery are thoroughly and religiously carried out, and have contributed much to assure success in these delicate operations. The instruments are kept in an antiseptic, hard-wood case, and are thoroughly boiled in pure water, before and after each operation. They are then extracted with forceps, and spread upon a porcelain slab covered with a moistened sheet of iodoform gauze. The operator having rendered his hands aseptic with soap and water, and with a 1 : 1000 bichloride solution, proceeds to disinfect thoroughly the conjunctiva with a 1 : 10,000 bichloride solution, being careful to evert the upper eyelid, and cleanse the internal canthus. The unaffected eye is then covered with a square of iodoform gauze and pledget of cotton, held in position by a strip of muslin passed obliquely, the extremities of which have been rendered adhesive with diachylon ointment. The operation completed, the eye is again washed out, the wound lightly dusted with iodoform powder, the same dressing applied as on the other eye, and protected with a roller bandage, starch bandage, or metal protective, according to the indications.

Plastic operations. For ectropion, instead of the ordinary operation of fitting in an attached flap from the face or forehead, transplantation, somewhat after the method of Prof. Thiersch, of Leipsic, the grafts being taken from the arm, has been utilized with the best results. The grafts are covered with moistened protective, iodoform gauze, cotton, and a starched bandage, and the denuded surface of the arm is preferably dressed with the dry protective powder of Prof. Thiersch,[1] and a dry dressing.

Iridectomy. When performed for optical purposes, the small, angular keratome is always employed, being considered safer than the bent, broad needle. When, however, it is performed for other than optical purposes, the large, triangular, bent keratome is preferred, and, in some cases, the small Graefe knife. The grasping and excision of the iris are done in the usual manner. In all cases the curette is employed to liberate any portion of the iris entangled in the incision; the wound is lightly dusted with iodoform, and a compress and metal protector applied.

Cataract extraction. The incision used by Prof. Fuchs, and by his assistant, Dr. Saltzman, is a modified Graefe linear incision, entirely in the sclerotic, the puncture and counter-puncture being somewhat higher than that ordinarily attributed to von Graefe. The iridectomy is performed in the usual manner. The anterior capsule is lacerated with the capsule forceps, which remove a segment of the capsule, and which have entirely replaced the cystotome. The removal of this segment was formerly accomplished by means of an iris forceps and scissors, after the laceration by the cystotome (Keyser). The lens and capsule are delivered in the usual manner, by pressure with a Daviel's scoop, and the iris is very carefully redressed with a curette. The dressing consists of the one already described, being supported and protected by a wire shutter (*augen schuts gütter*), an irregularly rectangular frame, bound with black braid, and secured by four tapes. Secondary or capsular cataracts are not so frequent after the use of the capsule forceps as when the cystotome is employed; but when they occur, and especially after discission, they are depressed with a needle, very much after the method of the old couching (reclination) operation.

Sclerotomy, as now generally performed, is not looked upon with favor, but the sclerotomy of de Wecker, with a small Graefe knife, is highly recommended.

Removal of foreign bodies. For the removal of foreign bodies from the vitreous, Hirschberg's electro-magnet is used, the same care being exercised to render the needles aseptic. The incision is made, with a Graefe knife, through the conjunctiva sclerotica, unless the object is known to be lodged in some other situation.

Enucleation is performed by the more rapid method, without the use of the strabismus hook. The tendon of the external rectus in the left (or the internal in the right) is firmly grasped with a fixation forceps, and, with the curved, sharp-pointed scissors, the conjunctiva is separated from its corneo-scleral attachment. The superior and inferior rectus are divided by sweeping the scissors round with one blade beneath and the other above the

[1] The formula for which is, zinci sulph., aluminis, pulv. talci, equal parts.

tendon. Traction is made, and by two or three successive snips the nerve is reached and divided, and nothing remains but the rectus on the other side, and a small quantity of connective tissue.

JAMES K. YOUNG.

PHILADELPHIA, September 24, 1888.

STERILIZED MILK.

To the Editor of THE MEDICAL NEWS,

SIR: In a letter published in your issue of October 6, 1888, page 403, I am somewhat warmly rebuked for "careless stricture" of the method of steaming milk suggested by Dr. J. A. Jeffries and others.

As Dr. Jeffries acknowledges that one steaming does not completely sterilize milk, I fail to discover wherein I have sinned in striving for a more perfect method, which may be taken as a standard for practical purposes. Whatever is worth doing at all, is surely worth doing well.

Dr. Jeffries claims that from milk steamed once "the child will obtain fewer bacteria than from the mother's nipple." Has he made an actual comparative count? Until he does so, the profession must decline to accept this dictum.

The most singular statement Dr. Jeffries makes, however, is that inasmuch as babies continually suck bacteria from their toes, etc., the few bacteria taken in steamed milk can do them no harm. This reasoning may satisfy Dr. Jeffries, but it will probably not be approved by the profession, since Pasteur, Kueppe, Lœffler, Lister, Schröder, and von Dusch have demonstrated that while boiling does kill the bacteria, there is subsequent to the boiling a development of infusoria and of bacilli capable of producing spores which will precipitate casein under alkaline reaction, and that nothing short of a continuous exposure for half an hour to a temperature of 86° F. will sterilize milk completely.

The object of my paper was chiefly to impress upon the profession the importance of sterilizing milk for infants, in the hope, that "when the facts referred to receive general recognition in the profession, dairymen would find it to their interest to obtain proper apparatus for sterilizing large quantities of milk and delivering it in appropriate sealed vessels to consumers in large cities." (THE MEDICAL NEWS, July 7, 1888.) That this is not an Utopian idea, is demonstrated by the fact that it has already been adopted by a firm on Boylston Street, Boston, which claims to furnish "sterilized cow's milk preserved unsweetened in clean glass bottles."

Until this idea is more generally adopted, I welcome Soxhlet's apparatus and the methods of Drs. Jeffries, Rotch, and Caillé as steps in the right direction.

SIMON BARUCH.

47 EAST SIXTIETH ST., NEW YORK,
October 18, 1888.

DIET IN THE CONVALESCENCE OF TYPHOID FEVER.

To the Editor of THE MEDICAL NEWS,

SIR: The discussion upon the management of the convalescent stage of typhoid fever, which took place at the recent Medical Congress, and your editorial (Oct. 13th) upon the same subject, both seem to me very timely and of more than usual interest.

From my own somewhat extensive experience, I am rather surprised that there should have been any disagreement in the matter. I have long ago concluded that the convalescent period of typhoid fever is about as critical as any other, and that if we know anything at all about the management of the disease, it is that the patient should be restricted to liquid food for at least seven days after the temperature has reached and remained at the normal, and longer if there still exist any abdominal pain or tenderness.

The necessity of such a course has so frequently been unpleasantly forced upon my attention, that I have come to regard any unheeding of the warning as being dangerously culpable.

Very respectfully,

GEORGE B. FOWLER, M.D.

11 WEST FORTY-FIFTH ST., NEW YORK,
October 17, 1888.

NEWS ITEMS.

An Injunction Preventing the Unauthorized Publication of Lectures.—The suit of Dr. Theodore G. Wormley, Professor of Chemistry and Toxicology in the Medical Department of the University of Pennsylvania, against Walter B. Saunders, a publisher, to restrain Saunders from publishing and selling books on general and medical chemistry made up of condensations from lectures delivered by the complainant, was argued last week in the Court of Common Pleas of Philadelphia.

It was admitted by the defendant, as a matter of law, that the deliverer of oral lectures still has the right of property in those lectures, but in this case it was claimed Dr. Wormley had abandoned his right of property because he permitted the defendant to publish the lectures without protest. Mr. Saunders said that the books containing the substance of the lectures had been sold on the market for several years, and that during all the time he has been selling these books he never received any notice from the complainant, or protest against their sale or publication. He believed that Dr. Wormley knew of these publications and sales.

The answer to this was that there was no evidence that Dr. Wormley knew of the publications, and that in point of fact when he did find out, about six years ago, that another party was printing and publishing his lectures, he compelled that person to surrender up all of the remaining copies and they were burned at the University of Pennsylvania.

Judge Allison, applying the principle of law stated above, said that the answer of the defendant failed to state that Dr. Wormley assented to the publications, that the only length it goes is to state the defendant's "belief" that Dr. Wormley knew of them, and defendant does not say that Dr. Wormley did not object to them. Judge Allison held that, as such averments had not been made, Dr. Wormley's right of property in the lectures remained unaffected, and the preliminary injunction which was granted restraining the publication and sale was accordingly continued in force.

A National Health Organization Wanted.—At a meeting of the Councillors of the Massachusetts Medical Society, held October 3, 1888, the following resolves were unanimously adopted:

That in the opinion of the Councillors of the Massa-

chusetts Medical Society, the present epidemic of yellow fever in several States of this Union has again made evident the imperative need of some organization on the part of the general government for the protection of the public health—an organization that shall be independent of existing bureaus, and solely devoted to this most necessary function of any form of government.

That this resolution be sent to the President of the United States, to members of Congress, and to the Boards of Health of the several States.

Treatment of Foul Ships—In order to stimulate shipmasters to aid in securing a clean ocean-going fleet, the following regulation concerning the treatment of foul ships has been adopted by the Marine-Hospital Service, and will be observed at all National Quarantine Stations:

1. When a vessel arrives at any National Quarantine Station from an infected port, and requires disinfection, she will be subjected to *ordinary disinfection*, as provided in former regulations.

2. When any vessel shall arrive at a National Quarantine Station in such foul condition as to render her dangerous from a sanitary point of view, and is found to require cleansing and disinfection, having at any former time within one year been subjected to ordinary disinfection, such vessel will be required to undergo *extraordinary disinfection*, which, in addition to the ordinary measures, will include holy-stoning, scraping, the taking out of rotten wood, a second disinfection, and interior repainting, all of which will be required before granting a certificate of free pratique.

Rules for a Healthy Milk Supply.—According to DR. E. H. BARTLEY (*Brooklyn Medical Journal*, October, 1888), the following rules contain some of the most important guides for the protection of the dealer in milk, as well as for the protection of the public:

1. The milk of diseased cows should not be sent to market. Any condition that produces a fever in a milch cow should be regarded as rendering the milk bad.

2. The milk of cows fed upon distillery swill, or those fed entirely or largely upon fermenting brewer's grains, should not be sold for infant's food.

3. Cows should not be allowed to drink stagnant pond or ditch water.

4. Milk from cows that are overheated or worried, at the time of milking, should not be sent to market.

5. If the udders are dirty, they should be washed clean before milking.

6. The milk should be cooled outside of the stable, and the cans should be covered during the process, to exclude air and dust. Milk should be kept at a temperature below 60° F., but ice should never be put into it.

7. Warm milk should never be received from the dealer, nor should the can be left out on the sidewalk in summer.

8. Milk should always be kept covered, and should never be kept in an ice-box with meats or vegetables possessing an odor.

9. Ice-boxes, stores, and wagons in which milk is kept, should be kept clean and sweet by occasional washing with chloride of lime followed by clean water, or soap and water.

10. When possible, only full cans should be received. A small full can is better than a large one partly filled, as the agitation and churning of the milk is less in a full can. Avoid the unnecessary handling of milk. The necessary agitation of shipping and delivering is an injury to it.

11. Milk that has been brought back from the morning rounds should not be mixed with other milk; it should be cooled at once, and sold as soon as possible.

12. If milk is kept over night, a small portion of it should be boiled to see if it will curdle, before it is sold.

13. Each and every dairy's milk should be tested daily.

14. It is best to make a contract with the one who delivers the milk to you to furnish that of a given test by the lactometer, say 105 to 110, and giving at least ten per cent. of cream.

15. Milk which contains dirt settling to the bottom of the can, blood, offensive odors or taste, should not be sold to customers.

16. *Cleanliness* in the handling of milk *is absolutely essential to its wholesomeness.*

Arsenical Dyes in Drapery.—In spite of many warnings impressed by precept and experience, arsenical pigments continue to be used in house decoration and to injure health as heretofore. A typical example of poisoning due to this cause is reported to have occurred quite lately in the Civil Engineering College at Cooper's Hill. The facts related are the following. Some of the students, with an eye for the beautiful, had, it appears, adorned their apartments with cretonnes and Indian muslins of great brilliancy. About the same time a singular epidemic became prevalent in the establishment and was attended with the irritable condition of the alimentary tract and other symptoms characteristic of the action of an irritant poison suspended in the atmosphere. The presence of arsenic was naturally suspected, but the wall-papers did not contain it. The cretonne and muslin decorations, however, were found on examination to be highly arsenical, and one piece, it is said, contained rather more than nineteen grains of this poison in the square yard. Here then was the source of an otherwise inexplicable state of general ill-health which had been observed among the students for a year past. Happily the cause at work was detected before any fatal consequences had occurred, and probably a liberal allowance of exercise in the open air had much to do with this result. The lesson taught by this occurrence is not a new one. It merely rehearses the characters of a once familiar danger and shows that it still exists. The public must therefore now decide whether it will, in the face of such practical instruction as this, continue to choose articles of dress or household ware with regard to custom or to their cheap attractiveness alone, and without a question as to quality. Nor would we warn purchasers to be chary only of the more gaudy hues, for even such colors as black and dark blue are frequently unsafe. Arsenic is no doubt the ingredient most to be avoided, but it should be remembered also that aniline dyes have often proved injurious. It appears likely, indeed, that this is to some extent a consequence of the fact that arsenic is freely used in their manufacture.—*Lancet*, July 28, 1888.

Precautions against Fires in Theatres.—The Prefect of Police in Paris has issued a new set of regulations with

regard to the fire brigade service in theatres, which will, it is thought, reduce very much the risk of fire, so far, at least, as it can be reduced in the many theatres in Paris which have always been, and must remain, from the position they occupy, regular death-traps. A certain number of firemen are allotted to each theatre, who under no pretence are to be called out of the theatre, or to receive visits from friends or acquaintances. The chief of the detachment has the responsibility of seeing that all the apparatus for extinguishing a fire is in its allotted place and in proper order, and the commissary of police is to satisfy himself that this has been done before the theatre opens.

During the representation the chief of the detachment must be constantly moving about to see that the men are at their posts; that no one is smoking in the corridors or carrying open lights; and that access to the reservoirs and fire-plugs is not hampered by placing any scenery or stage properties in the way. He is to examine the manometer, and, if he finds that there is a deficiency of pressure in the water-mains, he must inform the nearest post of the fact. In the event of an insignificant outbreak, recourse is to be had only to the apparatus within reach of the *foyer;* but if the outbreak is of a more serious character, the nearest post is to be informed by telegraph.

At the close of each representation the firemen are to make a round of the theatre, and see that the iron curtain is lowered, the buckets filled, and the folding doors closed, and, in the event of these not working smoothly, they must be repaired at once.

The manager of the theatre is required implicitly to obey the orders of the district commissary of police, who, in the event of an outbreak of fire, assumes the sole command of the theatre until the arrival of the Prefect of Police or the chief officer of the Fire Brigade.—*British Medical Journal*, October 6, 1888.

A Noble Fee.—Sergeant-Major Freyer, M.D., I.M.S., has received a fee of one lakh of rupees (£10,000 sterling) from H. H. the Nawab of Rampur, as a token of esteem as well as an acknowledgment of his valuable services in the successful treatment of himself and General Azimuddin Khan, the popular head of the Administrative Agency of the State, who had suffered for nearly three months from a malignant rheumatic fever; his recovery has been the occasion of great rejoicing at Rampur. This is said to be the largest fee ever received by a medical practitioner in India, and probably has never been exceeded in any country.—*British Medical Journal*, October 6, 1888.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 16 TO OCTOBER 22, 1888.

PAGE, CHARLES, *Colonel and Assistant Surgeon-General, Medical Director of the Department.*—Will proceed to and inspect the Medical Department at Forts Ellis, Texas; Supply, Reno, Sill, and Gibson, Indian Territory; Fort Leavenworth, Kansas, and the Leavenworth Military Prison, in the order named, and upon completion of this duty, return to these Headquarters.—Par. 1, *S. O. 127, Headquarters Department of the Missouri, Fort Leavenworth, Kansas*, October 15, 1888.

COMEGYS, EDWARD T, *Captain and Assistant Surgeon.*—Is relieved from duty at Madison Barracks, New York, and will report in person to commanding officer Fort Bayard, New Mexico, for duty at that post, relieving First Lieutenant and Assistant Surgeon William D. Dietz.—Par. 18, *S. O. 240, A. G. O., Washington*, October 15, 1888.

DIETZ, WILLIAM D., *First Lieutenant and Assistant Surgeon.*—On being relieved by Captain Comegys, will report in person to commanding officer Alcatras Island, California, for duty at that post, reporting by letter to the commanding general Department of California.—Par. 18, *S. O. 240, A. G. O., Washington*, October 15, 1888.

MUNDAY, BENJAMIN, *Captain and Assistant Surgeon.*—Is relieved from duty at Jefferson Barracks, Missouri, and will report in person to the commanding officer Fort Sisseton, Dakota, for duty at that post, relieving First Lieutenant and Assistant Surgeon John L. Phillips, and reporting by letter to the commanding general Department of Dakota.—Par. 11, *S. O. 242, A. G. O., Washington*, October 17, 1888.

PHILLIPS, JOHN L., *First Lieutenant and Assistant Surgeon.*—On being relieved by Captain Munday, will report in person to the commanding officer, Fort Lyon, Colorado, for duty at that post, reporting by letter to the commanding general Department of the Missouri.—Par. 11, *S. O. 242, A. G. O., Washington*, October 17, 1888.

By direction of the Secretary of War, the following named officers of the Medical Department will report, in person, on October 23, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: JOHN DE B. W. GARDINER, *Captain and Assistant Surgeon;* WILLIAM C. GORGAS, *Captain and Assistant Surgeon;* C. N. BERKELEY MACAULEY, *Captain and Assistant Surgeon;* W. L. KNEEDLER, *First Lieutenant and Assistant Surgeon;* EDGAR A. MEARNS, *First Lieutenant and Assistant Surgeon.* Upon the completion of their examination, the officers named will rejoin their proper stations.—Par. 1, *S. O. 239, A. G. O., Washington, D. C.*, October 13, 1888.

BALL, R. R., *First Lieutenant and Assistant Surgeon* (U. S. Army).—Is granted leave of absence for one month, with permission to apply for an extension of one month.—Par. 3, *S. O. 129, Headquarters Department of the Missouri, Fort Leavenworth, Kansas*, October 18, 1888.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING OCTOBER 20, 1888.

MAGRUDER, A. F., *Surgeon.*—Ordered to Marine Barracks, Washington, D. C.

STONE, E. P., *Assistant Surgeon* —Detached from the "Richmond," and ordered to the "Minnesota."

KEENEY, J. F., *Assistant Surgeon.*—Detached from the "Minnesota," and ordered to the "Richmond."

MCCORMICK, A. M. D., *Assistant Surgeon.*—Detached from the Bureau of Medicine and Surgery, and ordered to the "Vermont."

MOORE, A. M., *Surgeon* —Detached from Naval Station, New London, Connecticut, and ordered to the "Kearsarge."

AUSTIN, A. A., *Passed Assistant Surgeon.*—Ordered to Naval Station, New London, Connecticut.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING OCTOBER 20, 1888.

ARMSTRONG, S. T., *Passed Assistant Surgeon.*—Granted leave of absence for sixteen days, October 17, 1888.

WOODWARD, R. M., *Assistant Surgeon.*—When relieved at Marine Hospital, Boston, Mass., to proceed to Marine Hospital, Chicago, Ill., for duty, October 12, 1888. Granted leave of absence for thirty days, October 17, 1888.

CONDICT, A. W., *Assistant Surgeon.*—Relieved from duty at Marine Hospital, Chicago, Ill.; ordered to Marine Hospital, Boston, Mass., October 12, 1888.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*